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SEARCH REQUEST FORM

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Title of Invention: Method for scavenging radicals with urocanic acid

Inventors (please provide full names): Kammeyer Arthur

Earliest Priority Filing Date: 6/25/98

***For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.**

See attached

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FILE COVERS 1907 - 3 Mar 2003 VOL 138 ISS 10
FILE LAST UPDATED: 2 Mar 2003 (20030302/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d all hitstr tot l63

L63 ANSWER 1 OF 13 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:516271 HCAPLUS
DN 135:81801
TI Cosmetic compositions containing a cationic fructan and an agent protecting keratins in skin and hair
IN Dubief, Claude; Restle, Serge
PA L'oreal, Fr.
SO Fr. Demande, 20 pp.
CODEN: FRXXBL
DT Patent
LA French
IC ICM A61K007-06
CC 62-3 (Essential Oils and Cosmetics)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	FR 2795951	A1	20010112	FR 1999-8964	19990709
	FR 2795951	B1	20010907		
PRAI	FR 1999-8964		19990709		

AB A cosmetic compn. is disclosed which comprises, in a vehicle that is cosmetically acceptable, at least one fructan carrying at least one amino group, and at least one keratin-protecting agent. The compn. is esp. appropriate for use in products for cleansing or conditioning hair or skin.
ST shampoo fructan UV screen skin hair
IT Fatty acids, biological studies
RL: BUU (Biological use, unclassified); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process); USES (Uses)
(C18-40; cosmetic compns. contg. a cationic fructan and an agent protecting keratins in skin and hair)
IT Polymers, biological studies
RL: BUU (Biological use, unclassified); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process); USES (Uses)
(amphoteric; cosmetic compns. contg. a cationic fructan and an agent protecting keratins in skin and hair)
IT Fats and Glyceridic oils, biological studies
RL: BUU (Biological use, unclassified); PEP (Physical, engineering or

chemical process); BIOL (Biological study); PROC (Process); USES (Uses)
(animal; cosmetic compns. contg. a cationic fructan and an agent protecting keratins in skin and hair)

IT Polyelectrolytes
(anionic; cosmetic compns. contg. a cationic fructan and an agent protecting keratins in skin and hair)

IT Sulfones
RL: BUU (Biological use, unclassified); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process); USES (Uses)
(benzotirazole derivs.; cosmetic compns. contg. a cationic fructan and an agent protecting keratins in skin and hair)

IT Hair preparations
(bleaches; cosmetic compns. contg. a cationic fructan and an agent protecting keratins in skin and hair)

IT Fatty acids, biological studies
RL: BUU (Biological use, unclassified); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process); USES (Uses)
(branched fatty acids; cosmetic compns. contg. a cationic fructan and an agent protecting keratins in skin and hair)

IT Polyelectrolytes
Surfactants
(cationic; cosmetic compns. contg. a cationic fructan and an agent protecting keratins in skin and hair)

IT Betaines
RL: BUU (Biological use, unclassified); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process); USES (Uses)
(coco alkyldimethyl; cosmetic compns. contg. a cationic fructan and an agent protecting keratins in skin and hair)

IT Amino group
Antioxidants
Cosmetics
Iridescent materials
Nanoparticles
Ozocerite
Perfumes
Preservatives
Radical scavengers
Sequestering agents
Shampoos
Sunscreens
Surfactants
Thickening agents
(cosmetic compns. contg. a cationic fructan and an agent protecting keratins in skin and hair)

IT Keratins
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(cosmetic compns. contg. a cationic fructan and an agent protecting keratins in skin and hair)

IT Ceramides
Oxides (inorganic), biological studies
Paraffin oils
Polysiloxanes, biological studies
Protein hydrolyzates
Proteins, general, biological studies
Vitamins
RL: BUU (Biological use, unclassified); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process); USES (Uses)
(cosmetic compns. contg. a cationic fructan and an agent protecting keratins in skin and hair)

IT Hair preparations
(dyes; cosmetic compns. contg. a cationic fructan and an agent

protecting keratins in skin and hair)
IT Fatty acids, biological studies
RL: BUU (Biological use, unclassified); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process); USES (Uses)
(esters; cosmetic compns. contg. a cationic fructan and an agent protecting keratins in skin and hair)
IT Alcohols, biological studies
RL: BUU (Biological use, unclassified); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process); USES (Uses)
(fatty; cosmetic compns. contg. a cationic fructan and an agent protecting keratins in skin and hair)
IT Polymers, biological studies
RL: BUU (Biological use, unclassified); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process); USES (Uses)
(hydrophilic; cosmetic compns. contg. a cationic fructan and an agent protecting keratins in skin and hair)
IT Carboxylic acids, biological studies
RL: BUU (Biological use, unclassified); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process); USES (Uses)
(hydroxy; cosmetic compns. contg. a cationic fructan and an agent protecting keratins in skin and hair)
IT Hair preparations
(permanent wave; cosmetic compns. contg. a cationic fructan and an agent protecting keratins in skin and hair)
IT UV radiation
(screens; cosmetic compns. contg. a cationic fructan and an agent protecting keratins in skin and hair)
IT Hair preparations
(straightening agents; cosmetic compns. contg. a cationic fructan and an agent protecting keratins in skin and hair)
IT Fats and Glyceridic oils, biological studies
RL: BUU (Biological use, unclassified); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process); USES (Uses)
(vegetable; cosmetic compns. contg. a cationic fructan and an agent protecting keratins in skin and hair)
IT 69-72-7D, Salicylic acid, derivs. 75-21-8, Ethylene oxide, biological studies 76-22-2D, Camphor, derivs. 95-14-7D, 1H-Benzotriazole, sulfone derivs. 108-46-3D, Resorcinol, dialkylaminotriazine derivs. 118-92-3, Anthranilic acid 118-92-3D, Anthranilic acid, salts 119-61-9D, Benzophenone, derivs. 120-46-7D, Dibenzoylmethane, derivs. 131-57-7, 2-Hydroxy-4-methoxybenzophenone 150-13-0, Paba 271-89-6D, Benzofuran, derivs. 621-82-9D, Cinnamic acid, esters 1973-05-3D, derivs. 3144-16-9D, Camphorsulfonic acid, derivs. 4065-45-6, UVINUL MS40 5466-77-3, 2-Ethylhexyl 4-methoxycinnamate 6197-30-4, Octocrylene 6969-49-9 9004-82-4, Sodium lauryl ether sulfate 9005-80-5, Inulin 9037-90-5D, Fructan, derivs. 12654-97-6D, Triazine, derivs. 27538-35-8, **Urocanic acid** ethyl ester 36332-93-1, methyl-18 eicosanoic acid 70356-09-1, 4-tert-Butyl 4'-methoxydibenzoylmethane 155633-54-8
RL: BUU (Biological use, unclassified); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process); USES (Uses)
(cosmetic compns. contg. a cationic fructan and an agent protecting keratins in skin and hair)

L63 ANSWER 2 OF 13 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:429203 HCAPLUS
DN 135:177303
TI Oxidative breakdown and conversion of **urocanic acid** isomers by hydroxyl radical generating systems
AU Kammeyer, A.; Eggelte, T. A.; Overmars, H.; Bootsma, A.; Bos, J. D.; Teunissen, M. B. M.
CS Department of Dermatology, Academic Medical Center, University of Amsterdam, Amsterdam, 1100 DE, Neth.

SO Biochimica et Biophysica Acta (2001), 1526(3), 277-285
CODEN: BBACAQ; ISSN: 0006-3002
PB Elsevier Science B.V.
DT Journal
LA English
CC 8-2 (Radiation Biochemistry)
AB **Cis-Urocanic acid** (cis-UCA), formed from **trans-urocanic acid** (trans-UCA) by photoisomerization, has been shown to mimic suppressive effects of UV on the immune system. It is our hypothesis that UCA oxidn. products in the skin play a role in the process of immunosuppression. Recently, both UCA isomers were found to be good hydroxyl radical **scavengers** and in this context we investigated the formation of products resulting from the interaction of hydroxyl radicals with UCA. Hydroxyl radicals were generated by (1) UV/H2O2 (photooxidn.), (2) ferrous ions/H2O2 (Fenton oxidn.) and (3) cupric ions/ascorbic acid. Oxidn. products were identified by spectrometric methods and assessed by reversed-phase HPLC anal. The photooxidn. of UCA was induced by UV-B and UV-C, but not by UV-A radiation. Photooxidn. and Fenton oxidn. of trans-UCA, as well as of cis-UCA yielded comparable chromatog. patterns of UCA oxidn. products. Several of the formed products were identified. The formation of three identified imidazoles was shown in UV-B exposed corneal layer samples, derived from human skin.
ST skin **urocanic acid** isomer UV photooxidn hydroxyl
IT **Fenton reaction**
Immune system
Immunosuppression
Oxidation, photochemical
UV A radiation
UV B radiation
UV C radiation
UV radiation
(oxidative breakdown and conversion of **urocanic acid** isomers by hydroxyl radical generating systems)
IT Skin
(stratum corneum; oxidative breakdown and conversion of **urocanic acid** isomers by hydroxyl radical generating systems)
IT **3352-57-6**, Hydroxyl radical, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(oxidative breakdown and conversion of **urocanic acid** isomers by hydroxyl radical generating systems)
IT 119-26-6, 2,4-Dinitrophenylhydrazine 298-12-4, Glyoxylic acid **645-65-8**, **Imidazole-4-acetic acid 1072-84-0**, **Imidazole-4-carboxylic acid 3034-50-2**, **Imidazole -4-carboxaldehyde**
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(oxidative breakdown and conversion of **urocanic acid** isomers by hydroxyl radical generating systems)
IT **3465-72-3**, **trans-Urocanic acid** **7699-35-6**, **cis-Urocanic acid**
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidative breakdown and conversion of **urocanic acid** isomers by hydroxyl radical generating systems)
RE.CNT 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD
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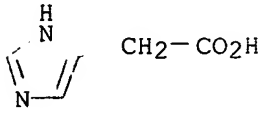
IT **3352-57-6**, Hydroxyl radical, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(oxidative breakdown and conversion of **urocanic acid** isomers by hydroxyl radical generating systems)

RN 3352-57-6 HCAPLUS
CN Hydroxyl (8CI, 9CI) (CA INDEX NAME)

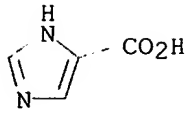
HO

IT **645-65-8**, **Imidazole-4-acetic acid** 1072-84-0, **Imidazole-4-carboxylic acid** 3034-50-2, **Imidazole-4-carboxaldehyde**
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(oxidative breakdown and conversion of **urocanic acid** isomers by hydroxyl radical generating systems)

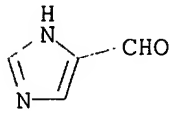
RN 645-65-8 HCAPLUS
CN 1H-Imidazole-4-acetic acid (9CI) (CA INDEX NAME)



RN 1072-84-0 HCAPLUS
CN 1H-Imidazole-4-carboxylic acid (9CI) (CA INDEX NAME)

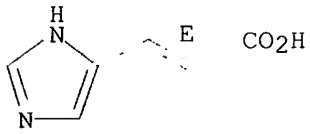


RN 3034-50-2 HCAPLUS
CN 1H-Imidazole-4-carboxaldehyde (9CI) (CA INDEX NAME)



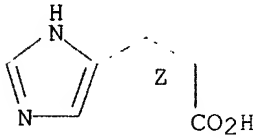
IT **3465-72-3, trans-Urocanic acid**
7699-35-6, cis-Urocanic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidative breakdown and conversion of **urocanic acid** isomers by hydroxyl radical generating systems)
RN 3465-72-3 HCAPLUS
CN 2-Propenoic acid, 3-(1H-imidazol-4-yl)-, (2E)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



RN 7699-35-6 HCAPLUS
CN 2-Propenoic acid, 3-(1H-imidazol-4-yl)-, (2Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



L63 ANSWER 3 OF 13 HCAPLUS COPYRIGHT 2003 ACS
AN **2001:121692** HCAPLUS
DN **135:255615**
TI Malnutrition, **urocanic acid**, and sun may interact to suppress immunity in sojourners to high altitude
AU Hug, Daniel H.; Hunter, John K.; Dunkerson, Duane D.
CS Bacteriology Research Laboratory, Department of Veterans and Affairs Medical Center, Iowa City, IA, 52246, USA
SO Aviation, Space and Environmental Medicine (2001), 72(2), 136-145
CODEN: ASEMCG; ISSN: 0095-6562
PB Aerospace Medical Association
DT Journal; General Review
LA English
CC 15-0 (Immunochemistry)
AB A review with 119 refs. Irradn. of skin by UV radiation in mice and humans leads to a suppression of cell-mediated immunity. This process is

initiated when one of the photoreceptors in skin, **trans-urocanic acid**, is photoisomerized to **cis-urocanic acid**, an immunomodulator. High levels of L-histidine, histamine, and **trans-urocanic acid** are found in humans and animals when they are protein malnourished. Mice fed on an elevated L-histidine diet have more **trans-urocanic acid** in the skin and are more susceptible to UV-induced immune suppression. Sojourners to high altitudes are malnourished, suffer protein catabolism, are exposed to sun, and often acquire infectious diseases. There is evidence that sunscreens may not adequately protect the immune system. Furthermore, UV intensity increases with altitude. We propose a testable hypothesis: UV radiation causes photoimmune suppression in sojourners to high altitude and this allows infectious diseases to develop. The mechanism we propose includes protein malnutrition, high levels of **trans-urocanic acid**, UV radiation, formation of **cis-urocanic acid**, immune suppression, and infection.

ST review high altitude immunosuppression infection **urocanic acid**

IT **Immunity**
(cell-mediated; malnutrition, **urocanic acid**, and sun may interact to suppress immunity in sojourners to high altitude)

IT Diastereomers
(geometric; malnutrition, **urocanic acid**, and sun may interact to suppress immunity in sojourners to high altitude)

IT Atmosphere (environmental)
(high-altitude; malnutrition, **urocanic acid**, and sun may interact to suppress immunity in sojourners to high altitude)

IT **Immunomodulators**
Immunosuppression
Infection
Malnutrition
Protein degradation
Solar UV radiation
Sun
(malnutrition, **urocanic acid**, and sun may interact to suppress immunity in sojourners to high altitude)

IT Photoreceptors
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(malnutrition, **urocanic acid**, and sun may interact to suppress immunity in sojourners to high altitude)

IT **104-98-3**, **Urocanic acid**
RL: **BAC (Biological activity or effector, except adverse)**; BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(malnutrition, **urocanic acid**, and sun may interact to suppress immunity in sojourners to high altitude)

RE.CNT 119 THERE ARE 119 CITED REFERENCES AVAILABLE FOR THIS RECORD

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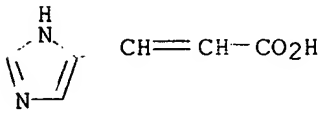
IT **104-98-3, Urocanic acid**
RL: **BAC (Biological activity or effector, except adverse)**; BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(malnutrition, **urocanic acid**, and sun may interact to suppress immunity in sojourners to high altitude)

RN 104-98-3 HCAPLUS
CN 2-Propenoic acid, 3-(1H-imidazol-4-yl)- (9CI) (CA INDEX NAME)



L63 ANSWER 4 OF 13 HCAPLUS COPYRIGHT 2003 ACS
AN **2001:12212** HCAPLUS
DN **134:90890**
TI Method for **scavenging** radicals with **urocanic acid**, derivatives and analogues
IN **Kammeijer, Arthur**
PA Academisch Ziekenhuis bij de Universiteit van Amsterdam, Neth.
SO PCT Int. Appl., 44 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM A61K007-00
ICS A61K007-42; A61K031-415; A61K007-48
CC 62-4 (Essential Oils and **Cosmetics**)
Section cross-reference(s): **1**, 15, **17**
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001000145	A1	20010104	WO 2000-NL439	20000623
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	EP 1196129	A1	20020417	EP 2000-942559	20000623
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2003506566	T2	20030218	JP 2001-515896	20000623
PRAI	EP 1999-202066	A	19990625		
	WO 2000-NL439	W	20000623		

AB The invention relates to antioxidants or radical **scavengers** and their reaction products. The invention provides compds. and compns. for use in methods for **scavenging** radicals or for modulating the immune response comprising **urocanic acid** or salts, derivs., functional equiv. and analogs thereof. The radical **scavengers** are useful for immunosuppression of skin immune system, and in cosmetic, food and pharmaceutical compns.

ST **urocanic acid** radical **scavenger** cosmetic food; skin immune system immunosuppression **urocanic acid**

IT Skin
(immunosuppression; method for **scavenging** radicals with **urocanic acid**, derivs. and analogs)

IT Animal
Antioxidants
Cosmetics
Drugs
Food
Immunomodulators
Immunosuppressants
Oxidative stress, biological
Radical scavengers
Solutions
(method for **scavenging** radicals with **urocanic acid**, derivs. and analogs)

IT **Radicals, biological studies**
RL: ADV (Adverse effect, including toxicity); BOC (Biological occurrence); BSU (Biological study, unclassified); REM (Removal or disposal); BIOL

(Biological study); OCCU (Occurrence); PROC (Process)
(method for **scavenging** radicals with **urocanic acid**, derivs. and analogs)

IT **1072-84-0P, Imidazole-4-carboxylic acid 3034-50-2P, 4-Formylimidazole**
RL: FFD (Food or feed use); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(method for **scavenging** radicals with **urocanic acid**, derivs. and analogs)

IT **104-98-3D, Urocanic acid**, salts 288-32-4D, Imidazole, derivs. **645-65-8, Imidazole-4-acetic acid 3465-72-3, trans-Urocanic acid**
RL: **FFD (Food or feed use); THU (Therapeutic use);** BIOL (Biological study); USES (Uses)
(method for **scavenging** radicals with **urocanic acid**, derivs. and analogs)

IT 32673-41-9, (4-Hydroxymethyl)imidazole hydrochloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(method for **scavenging** radicals with **urocanic acid**, derivs. and analogs)

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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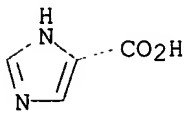
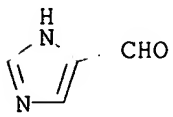
IT **1072-84-0P, Imidazole-4-carboxylic acid 3034-50-2P, 4-Formylimidazole**
RL: FFD (Food or feed use); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(method for **scavenging** radicals with **urocanic acid**, derivs. and analogs)

RN 1072-84-0 HCAPLUS
CN 1H-Imidazole-4-carboxylic acid (9CI) (CA INDEX NAME)

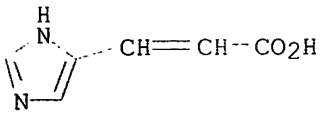


RN 3034-50-2 HCAPLUS
CN 1H-Imidazole-4-carboxaldehyde (9CI) (CA INDEX NAME)

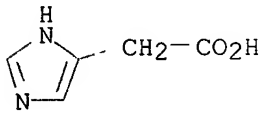


IT **104-98-3D, Urocanic acid**, salts **645-65-8, Imidazole-4-acetic acid 3465-72-3, trans-Urocanic acid**
RL: **FFD (Food or feed use); THU (Therapeutic use);** BIOL (Biological study); USES (Uses)
(method for **scavenging** radicals with **urocanic**

acid, derivs. and analogs)
RN 104-98-3 HCAPLUS
CN 2-Propenoic acid, 3-(1H-imidazol-4-yl)- (9CI) (CA INDEX NAME)

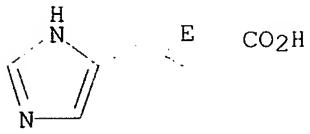


RN 645-65-8 HCAPLUS
CN 1H-Imidazole-4-acetic acid (9CI) (CA INDEX NAME)



RN 3465-72-3 HCAPLUS
CN 2-Propenoic acid, 3-(1H-imidazol-4-yl)-, (2E)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



L63 ANSWER 5 OF 13 HCAPLUS COPYRIGHT 2003 ACS
AN 2000:585381 HCAPLUS
DN 133:182770
TI Antiaging cosmetics containing tomato pigments
IN Uehara, Shizuka; Kameyama, Kumi; Kondo, Chiharu; Takada, Norihisa
PA Kosei Co., Ltd., Japan; Nippon Delmonte K. K.
SO Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM A61K007-42
ICS A61K007-00; A61K009-06; A61P017-00; A61K035-78
CC 62-4 (Essential Oils and **Cosmetics**)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2000229827	A2	20000822	JP 1999-28301	19990205
PRAI JP 1999-28301		19990205		

AB The cosmetics are claimed. The tomato pigments may mainly comprise lycopene isolated by centrifugation of tomato prepns., microfiltration of the liq. parts, and collection of unfiltered substances by microfiltration. The cosmetics may addnl. contain active oxygen **scavengers**, antioxidants, inflammation inhibitors, UV shields, cell activators, and/or moisturizers. A cream contg. the tomato pigment was used by volunteers to lighten skin and increase elasticity.
ST tomato pigment antiaging cosmetic; lycopene complex antiaging cosmetic
IT Natural products, **pharmaceutical**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses).

(Mudanpi, exts.; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Carotenes, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(active oxygen **scavenger**; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Anti-inflammatory agents
Antioxidants
Pigments, biological
Radical scavengers
Royal jelly
Sophora flavescens
Tomato
UV shields
UV stabilizers
(antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT **Cosmetics**
(antiaging; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Beech (Fagus crenata)
(bud, exts., cell activator; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Cattle
(calf, blood exts., cell activator; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Amino acids, biological studies
Carbohydrates, biological studies
Ceramides
Collagens, biological studies
DNA
Elastins
Fibronectins
Glycolipids
Hemoglobins
Keratins
Lactoferrins
Mucins
Mucopolysaccharides, biological studies
Phospholipids, biological studies
Protein hydrolyzates
RNA
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(cell activator; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Head
(comb, exts., cell activator; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Blood serum
(deproteinated, exts., cell activator; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Grape
(exts., cell activator and moisturizer; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Asparagus
Avocado

Barley
Bifidobacterium
Capsicum annuum
Carrot
Cordyceps
Egg, poultry
Ganoderma lucidum
Garlic (Allium sativum)
Lactic acid bacteria
Lentinula edodes
Lettuce (Lactuca sativa)
Placenta
Rosemary
Shell
Soybean (Glycine max)
Spleen
Swertia japonica
Yeast
(exts., cell activator; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Actinidia chinensis
Aloe (genus)
Apple
Apricot (Prunus armeniaca)
Artemisia capillaris
Asiasarum
Burdock
Cactus (Cactaceae)
Centaurea cyanus
Chaenomeles lagenaria
Citrus junos
Cnidium officinale
Coix lacryma-jobi
Corn
Cucumber (Cucumis sativus)
Equisetum arvense
Fennel (Foeniculum vulgare)
Gentian (Gentiana lutea)
Ginger
Grapefruit
Hamamelis virginiana
Hop (Humulus lupulus)
Horse chestnut (Aesculus hippocastanum)
Houttuynia cordata
Ivy (Hedera rhombea)
Lavender (Lavandula)
Lemon (Citrus limon)
Lime (Citrus aurantifolia)
Linden (Tilia miqueliana)
Luffa cylindrica
Lupine (Lupinus)
Mallow (Malva sylvestris)
Marshmallow (Althaea officinalis)
Oat
Ononis
Orange
Peach (Prunus persica)
Peony (Paeonia lactiflora)
Peppermint (Mentha piperita)
Pine (Pinus)
Poria cocos
Prune
Quince (Cydonia oblonga)

Raspberry
Rehmannia glutinosa
Ruscus aculeatus
Sanguisorba officinalis
Seaweed
Strawberry
Thyme (Thymus vulgaris)
Urtica thunbergiana
(exts., moisturizer; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Angelica keiskei
Arnica montana
Artemisia indica
Astragalus sinicus
Birch (Betula platyphylla)
Calendula officinalis
Chamomilla
Comfrey (Symphytum)
Cork tree (Phellodendron amurense)
Curcuma longa
Elder (Sambucus sieboldiana)
Eucalyptus
Geranium thunbergii
Ginkgo
Hawthorn (Crataegus cuneata)
Licorice (Glycyrrhiza glabra)
Melissa
Mucuna birdwoodiana
Parsley (Petroselinum crispum)
Perilla frutescens
Polygonum bistorta
Potentilla
Rose (Rosa rugosa)
Sage (Salvia officinalis)
Sapindus mukorossi
Saxifraga stolonifera
Scutellaria baicalensis
St.-John's-wort (Hypericum erectum)
Stevia
Tea (Camellia sinensis)
Watercress
(exts.; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Rice (Oryza sativa)
(fermented products, exts., cell activator; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Honeysuckle (Lonicera japonica)
(flower bud, exts.; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Jujube (Zizyphus)
(fruit, exts., cell activator; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Rose (Rosa)
(fruit, exts., moisturizer; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Momordica grosvenori
(fruit, exts.; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Wheat
(germ, exts., moisturizer; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Lactoferrins
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(hydrolyzates, cell activator; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Squid
(ink, exts., cell activator; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Honey
(moisturizer; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT **Cosmetics**
(moisturizers; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Cattail (Typha)
(pollen, exts.; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Sugarcane
(raw sugar from, exts., moisturizer; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Mulberry (Morus alba)
(root bark, exts., moisturizer; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Acanthopanax
Lycium chinense
(root bark, exts.; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Angelica acutiloba
Lithospermum
(root, exts.; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Ceratonia siliqua
(seed, exts., moisturizer; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Proteins, specific or class
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(silk, cell activator; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT Lily (Lilium)
(white, exts., moisturizer; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT 87-28-5, Ethylene glycol salicylate 94-09-7, Ethyl p-aminobenzoate 104-28-9 **104-98-3, Urocanic acid** 118-56-9, Homomenthyl salicylate 118-60-5, 2-Ethylhexyl salicylate 131-55-5, 2,2',4,4'-Tetrahydroxybenzophenone 131-56-6, 2,4-Dihydroxybenzophenone 131-57-7, 2-Hydroxy-4-methoxybenzophenone 136-44-7, Glyceryl p-aminobenzoate 150-13-0, p-Aminobenzoic acid 1314-13-2, Zinc oxide, biological studies 1314-23-4, Zirconium oxide, biological studies 1332-37-2, Iron oxide, biological studies 2440-22-4, 2-(2-Hydroxy-5-methylphenyl)benzotriazole 3121-60-6 5466-77-3 13463-67-7, Titania, biological studies 14779-78-3, Amyl N,N-dimethyl-p-aminobenzoate 21245-02-3 27538-35-8, Ethyl urocanate 70356-09-1, 4-tert-Butyl-4'-methoxydibenzoylmethane 76840-16-9, Glyceryl mono-2-ethylhexanoate di-p-methoxycinnamate 86636-96-6, Potassium 4-methoxycinnamate 288571-71-1 288573-50-2 288573-51-3
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(UV shield; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT 57-88-5, Cholesterol, biological studies 69-65-8, Mannitol 70-18-8, Glutathione, biological studies 71-00-1, Histidine, biological studies 73-22-3, Tryptophan, biological studies 117-39-5, Quercetin 131-54-4, 2,2'-Dihydroxy-4,4'-dimethoxybenzophenone 149-91-7, Gallic acid, biological studies 153-18-4, Rutin 154-23-4, Catechin 472-61-7, Astaxanthin 522-12-3, Quercitrin 635-65-4, Bilirubin, biological studies 9054-89-1, Superoxide dismutase
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(active oxygen **scavenger**; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT 502-65-8D, Lycopene, complexes
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT 50-81-7, Vitamin C, biological studies 59-43-8, biological studies 1406-16-2, Vitamin D 1406-18-4, Vitamin E 11103-57-4, Vitamin A 30587-81-6, Dibutylhydroxytoluene 82321-68-4, Dibutylhydroxyanisole
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(antioxidant; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT 50-21-5, biological studies 50-28-2, Estradiol, biological studies 50-70-4, Sorbitol, biological studies 50-99-7, Glucose, biological studies 51-35-4, Hydroxyproline 52-90-4, Cysteine, biological studies 56-40-6, Glycine, biological studies 56-41-7, L-Alanine, biological studies 56-45-1, Serine, biological studies 56-65-5, Adenosine triphosphate, biological studies 56-84-8, Aspartic acid, biological studies 56-85-9, Glutamine, biological studies 56-86-0, Glutamic acid, biological studies 56-87-1, Lysine, biological studies 56-89-3, Cystine, biological studies 57-13-6, Urea, biological studies 57-48-7, Fructose, biological studies 57-50-1, biological studies 58-08-2, Caffeine, biological studies 58-55-9, Theophylline, biological studies 58-64-0, Adenosine diphosphate, biological studies 58-86-6, Xylose, biological studies 60-18-4, Tyrosine, biological studies 60-92-4 61-19-8, Adenosine monophosphate, biological studies 63-68-3, Methionine, biological studies 63-91-2, Phenylalanine, biological studies 65-71-4, Thymine 69-72-7, biological studies 69-79-4, Maltose 69-89-6, Xanthine 70-26-8, Ornithine 70-47-3, Asparagine, biological studies 71-30-7, Cytosine 72-18-4, Valine, biological studies 72-19-5, Threonine, biological studies 73-24-5, Adenine, biological studies 73-32-5, Isoleucine, biological studies 73-40-5, Guanine 74-79-3, Arginine, biological studies 77-92-9, biological studies 79-14-1, biological studies 81-13-0, D-Panthenol 87-69-4, biological studies 87-89-8, Inositol 87-99-0, Xylitol 98-79-3, Pyrrolidonecarboxylic acid 99-20-7, Trehalose 110-15-6, Butanedioic acid, biological studies 115-77-5, biological studies 146-14-5, Flavin adenine dinucleotide 147-85-3, Proline, biological studies 149-32-6, Erythritol 372-75-8, Citrulline 463-40-1, .alpha.-Linolenic acid 481-49-2, Cepharanthine 499-44-5, Hinokitiol 506-26-3, .gamma.-Linolenic acid 585-88-6, Maltitol 1190-94-9, Hydroxylysine 3081-61-6, Theanine 6915-15-7 7665-99-8, Cyclic GMP 7678-95-7 9004-53-9, Dextrin 9004-61-9, Hyaluronic acid 9005-49-6, Heparin, biological studies 9007-28-7, Chondroitin sulfate 9050-30-0, Heparan sulfate 9056-36-4, Keratan sulfate 24967-94-0, Dermatan sulfate 25378-27-2, Eicosapentaenoic acid
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(cell activator; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

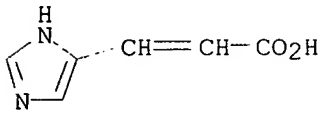
IT 11129-18-3, Cerium oxide

RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(exts.; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT 50-33-9, Phenylbutazone, biological studies 53-86-1, Indomethacin 60-32-2 61-68-7, Mefenamic acid 97-59-6, Allantoin 471-53-4, Glycyrrhetinic acid 489-84-9, Guaiazulene 1197-18-8, Tranexamic acid 1405-86-3, Glycyrrhizinic acid 15307-79-6, Diclofenac sodium 15687-27-1, Ibuprofen 22071-15-4, Ketoprofen
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(inflammation inhibitor; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

IT **104-98-3, Urocanic acid**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(UV shield; antiaging cosmetics contg. tomato pigments mainly comprising lycopene complexes and other active ingredients)

RN 104-98-3 HCAPLUS
CN 2-Propenoic acid, 3-(1H-imidazol-4-yl)- (9CI) (CA INDEX NAME)



L63 ANSWER 6 OF 13 HCAPLUS COPYRIGHT 2003 ACS
AN **2000:396584** HCAPLUS
DN **133:34314**
TI Skin protection preparations with UV filters for the prevention of skin damage
IN Lautenschlaeger, Hans; Albrecht, Martin; Bohn, Michael; Weisser, Martin
PA Kuhs G.m.b.H. & Co., Germany
SO Ger. Offen., 12 pp.
CODEN: GWXXBX
DT Patent
LA German
IC ICM A61K007-40
ICS A61K007-48; A61K031-685
CC 62-4 (Essential Oils and **Cosmetics**)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19857491	A1	20000615	DE 1998-19857491	19981214

PRAI DE 1998-19857491 19981214

AB Prepns. for protection of the skin from both exogenous damage (e.g. from irritants) and endogenous lesions and reinforcing the lipid barrier function of the skin, without accumulating on the skin, contain satd. phosphatidylcholines as well as medium-chain triglycerides, salts, moisture-retaining substances, UV filter substances, dermatol. or cosmetic active substances, and 20.00-95.00 wt.% water. Thus, a topical prepn. for treatment of acne contained satd. phosphatidylcholine 1.30, medium-chain triglycerides 8.00, NaCl 0.10, urea 2, glycerin 3, propylene glycol 8.00, Na urocanate 2.00, EtOH 9, Na polyacrylate 0.5, and H2O 71.10 wt.%.

ST skin protectant phosphatidylcholine

IT **Skin preparations (pharmaceutical)**
(astringents; skin protection prepns. with UV filters for prevention of skin damage)

IT Fats and Glyceridic oils, biological studies
RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL

(Biological study); USES (Uses)
(avocado; skin protection prepns. with UV filters for prevention of skin damage)
IT Heavy metals
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(contact allergy to, treatment of; skin protection prepns. with UV filters for prevention of skin damage)
IT Dermatitis
(contact; skin protection prepns. with UV filters for prevention of skin damage)
IT Skin, disease
(dry; skin protection prepns. with UV filters for prevention of skin damage)
IT Fatty acids, biological studies
RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(essential; skin protection prepns. with UV filters for prevention of skin damage)
IT Yeast
(ext., skin protection prepns. with UV filters for prevention of skin damage)
IT Plant (Embryophyta)
(ext.; skin protection prepns. with UV filters for prevention of skin damage)
IT Skin, disease
(hyperpigmentation; skin protection prepns. with UV filters for prevention of skin damage)
IT Skin, disease
(ichthyosis; skin protection prepns. with UV filters for prevention of skin damage)
IT Skin, disease
(irritation; skin protection prepns. with UV filters for prevention of skin damage)
IT Fungicides
(medical; skin protection prepns. with UV filters for prevention of skin damage)
IT Glycerides, biological studies
RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(medium-chain; skin protection prepns. with UV filters for prevention of skin damage)
IT **Cosmetics**
(moisturizers; skin protection prepns. with UV filters for prevention of skin damage)
IT Dermatitis
(neurodermatitis; skin protection prepns. with UV filters for prevention of skin damage)
IT Fats and Glyceridic oils, biological studies
RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(shea butter; skin protection prepns. with UV filters for prevention of skin damage)
IT Acne
Anti-infective agents
Anti-inflammatory agents
Antihistamines
Antiviral agents
Beeswax
Chelating agents
Cosmetics
Disinfectants
Immunosuppressants
Pigments, biological

Psoriasis
Skin preparations (pharmaceutical)
Sunscreens
(skin protection prepns. with UV filters for prevention of skin damage)

IT Fatty acids, biological studies
Jojoba oil
Kaolin, biological studies
Lipids, biological studies
Phosphatidylcholines, biological studies
Salts, biological studies
Vitamins
Waxes
RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(skin protection prepns. with UV filters for prevention of skin damage)

IT Anesthetics
Drug delivery systems
(topical; skin protection prepns. with UV filters for prevention of skin damage)

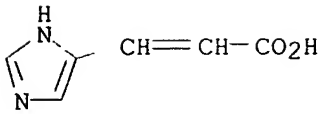
IT Fats and Glyceridic oils, biological studies
RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(vegetable; skin protection prepns. with UV filters for prevention of skin damage)

IT 56-81-5, Glycerin, biological studies 57-11-4, Stearic acid, biological studies 57-13-6, Urea, biological studies 57-55-6, Propylene glycol, biological studies 57-88-5, Cholesterol, biological studies 58-95-7, Vitamin E acetate 67-97-0, Vitamin D3 69-72-7, Salicylic acid, biological studies 69-72-7D, Salicylic acid, derivs. 81-13-0, Panthenol **104-98-3D, Urocanic acid**, derivs. 106-14-9, 12-Hydroxystearic acid 110-27-0, Isopropyl myristate 111-01-3, Squalane 111-29-5, Pentylene glycol 118-60-5, 2-Ethylhexyl salicylate 119-61-9D, Benzophenone, derivs. 120-46-7D, Dibenzoylmethane, derivs. 150-13-0, 4-Aminobenzoic acid 150-13-0D, 4-Aminobenzoic acid, derivs. 290-87-9D, 1,3,5-Triazine, derivs. 621-82-9D, Cinnamic acid, derivs. 1143-38-0, Dithranol 1314-13-2, Zinc oxide, biological studies 1332-37-2, Iron oxide, biological studies 2836-32-0, Sodium glycolate 4151-35-3 4602-84-0, Farnesol 5466-77-3, 2-Ethylhexyl 4-methoxycinnamate 6159-49-5, Sodium urocanate 7447-40-7, Potassium chloride, biological studies 7487-88-9, Magnesium sulfate, biological studies 7647-14-5, Sodium chloride, biological studies 7704-71-4, Magnesium fumarate 7704-73-6, Sodium fumarate 7757-82-6, Sodium sulfate, biological studies 7778-80-5, Potassium sulfate, biological studies 7786-30-3, Magnesium chloride, biological studies 9002-92-0, Polidocanol 9003-04-7, Sodium polyacrylate 9012-76-4, Chitosan 11138-66-2, Xanthan gum 13463-67-7, Titanium dioxide, biological studies 17013-01-3, Disodium fumarate 17356-30-8, Azelaic acid monosodium salt 64296-33-9, Vitamin C palmitate 70356-09-1, 1-(4-tert-Butylphenyl)-3-(4-methoxyphenyl)propane-1,3-dione
RL: BUU (Biological use, unclassified); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(skin protection prepns. with UV filters for prevention of skin damage)

RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Anon; DE 4021082 A1 HCAPLUS

IT **104-98-3D, Urocanic acid**, derivs.
RL: BUU (Biological use, unclassified); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(skin protection prepns. with UV filters for prevention of skin damage)

RN 104-98-3 HCAPLUS
CN 2-Propenoic acid, 3-(1H-imidazol-4-yl)- (9CI) (CA INDEX NAME)



L63 ANSWER 7 OF 13 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:394113 HCAPLUS
DN 131:196423
TI **Urocanic acid** isomers are good hydroxyl radical **scavengers**: a comparative study with structural analogues and with uric acid
AU Kammeyer, Arthur; Eggelte, Teunis A.; Bos, Jan D.; Teunissen, Marcel B. M.
CS Department of Dermatology, Academic Medical Centre, Amsterdam, 1100 DD, Neth.
SO Biochimica et Biophysica Acta (1999), 1428(1), 117-120
CODEN: BBACAQ; ISSN: 0006-3002
PB Elsevier Science B.V.
DT Journal
LA English
CC 8-7 (Radiation Biochemistry)
Section cross-reference(s): 13
AB UV-exposure of the epidermis leads to the isomerization of trans-UCA into cis-UCA as well as to the generation of hydroxyl radicals. This study shows by means of the deoxyribose degrdn. test that UCA isomers are more powerful hydroxyl radical **scavengers** than the other 4-(5-)substituted imidazole derivs., such as histidine, though less powerful than uric acid. UCA, present in relatively high concns. in the epidermis, may well be a major natural hydroxyl radical **scavenger**.
ST **urocanic acid** natural hydroxyl radical **scavenger**; UV epidermis **urocanic acid** hydroxyl radical **scavenger**
IT Skin
(epidermis, hydroxyl radical formation by UV-exposure of the epidermis; **urocanic acid** isomers are good hydroxyl radical **scavengers**: a comparative study with structural analogs and with uric acid)
IT UV radiation
(hydroxyl radical formation by UV-exposure of the epidermis; **urocanic acid** isomers are good hydroxyl radical **scavengers**, a comparative study with structural analogs and with uric acid)
IT **Oxidative stress, biological**
Structure-activity relationship
(**urocanic acid** isomers are good hydroxyl radical **scavengers**: a comparative study with structural analogs and with uric acid)
IT **3465-72-3, trans-Urocanic acid**
RL: **BAC (Biological activity or effector, except adverse)**; BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(**urocanic acid** isomers are good hydroxyl radical **scavengers**, a comparative study with structural analogs and with uric acid)
IT **3352-57-6**, Hydroxyl radical, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(**urocanic acid** isomers are good hydroxyl radical **scavengers**, a comparative study with structural analogs and with uric acid)
IT 56-41-7, L-Alanine, biological studies 288-32-4, Imidazole, biological

studies 645-65-8, **Imidazole-4-acetic acid** 693-98-1, 2-Methylimidazole 1074-59-5, Dihydrourocanic acid 7699-35-6, **cis-Urocanic acid** 15690-24-1
RL: **BAC (Biological activity or effector, except adverse)**; BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(**urocanic acid** isomers are good hydroxyl radical **scavengers**: a comparative study with structural analogs and with uric acid)

IT 69-93-2, Uric acid, biological studies 71-00-1, L-Histidine, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(**urocanic acid** isomers are good hydroxyl radical **scavengers**: a comparative study with structural analogs and with uric acid)

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Anglin, J; Cosmet Toiletries 1976, V91, P47 HCAPLUS
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(4) Babizhayev, M; Biochem J 1994, V304, P509 HCAPLUS
(5) Becker, B; Free Radic Biol Med 1993, V14, P615 HCAPLUS
(6) Black, H; Photochem Photobiol 1987, V46, P213 HCAPLUS
(7) Boveris, A; Biochem J 1972, V128, P617 HCAPLUS
(8) Ching, T; Chem Biol Interact 1993, V86, P119 HCAPLUS
(9) Ching, T; Mediators Inflamm 1995, V4, P339 HCAPLUS
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(11) Gibbs, N; Photochem Photobiol 1993, V57, P584 HCAPLUS
(12) Gibbs, N; Photochem Photobiol 1993, V58, P769 HCAPLUS
(13) Goldblum, W; J Invest Dermatol 1953, V20, P13
(14) Gorodetsky, R; Int J Dermatol 1986, V25, P440 HCAPLUS
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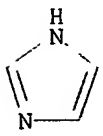
(18) Kammeyer, A; Br J Dermatol 1995, V132, P884 HCAPLUS
(19) Lewisch, S; Anal Biochem 1995, V231, P440 HCAPLUS
(20) McCormick, J; Science 1976, V191, P468 HCAPLUS
(21) Morrison, H; Photodermatology 1985, V2, P158 HCAPLUS
(22) Norval, M; Photochem Photobiol 1995, V62, P209 HCAPLUS

IT **3465-72-3, trans-Urocanic acid**
RL: **BAC (Biological activity or effector, except adverse)**; BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(**urocanic acid** isomers are good hydroxyl radical **scavengers**, a comparative study with structural analogs and with uric acid)

RN 3465-72-3 HCAPLUS
CN 2-Propenoic acid, 3-(1H-imidazol-4-yl)-, (2E)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



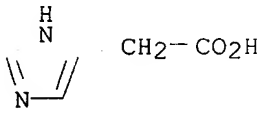
E CO_2H

IT **3352-57-6**, Hydroxyl radical, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)

(**urocanic acid** isomers are good hydroxyl radical **scavengers**, a comparative study with structural analogs and with uric acid)
RN 3352-57-6 HCAPLUS
CN Hydroxyl (8CI, 9CI) (CA INDEX NAME)

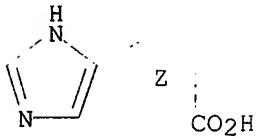
HO

IT **645-65-8**, **Imidazole-4-acetic acid** 7699-35-6, **cis-Urocanic acid**
RL: **BAC (Biological activity or effector, except adverse)**; BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(**urocanic acid** isomers are good hydroxyl radical **scavengers**: a comparative study with structural analogs and with uric acid)
RN 645-65-8 HCAPLUS
CN 1H-Imidazole-4-acetic acid (9CI) (CA INDEX NAME)



RN 7699-35-6 HCAPLUS
CN 2-Propenoic acid, 3-(1H-imidazol-4-yl)-, (2Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



L63 ANSWER 8 OF 13 HCAPLUS COPYRIGHT 2003 ACS
AN **1998:54159** HCAPLUS
DN **128:175967**
TI The effect of **urocanic acid** on graft rejection in an experimental model of orthotopic corneal transplantation in rabbits
AU Filipec, Martin; Letko, Erik; Haskova, Zdenka; Jenickova, Dagmar; Holler, Petr; Jancerek, Alexander; Holan, Vladimir
CS Second Department of Ophthalmology, First Medical Faculty, Charles University, Prague, CZ-128 08/2, Czech Rep.
SO Graefe's Archive for Clinical and Experimental Ophthalmology (1998), 236(1), 65-68
CODEN: GACODL; ISSN: 0721-832X
PB Springer-Verlag
DT Journal
LA English
CC 1-7 (**Pharmacology**)
AB **Urocanic acid** (UCA) is a natural component of the stratum corneum of the skin. It has been described as a photoreceptor for UV B radiation. UCA is present in the skin as a trans-isomer and undergoes UVB irradn.-dependent isomerization from trans-to cis-isomer. An immunosuppressive effect of irradiated UCA, i.e. a mixt. of cis- and

trans-isomers, has been demonstrated both in vivo and in vitro. The aim of this study was to evaluate an immunosuppressive effect of irradiated UCA on graft rejection in an exptl. model of orthotopic corneal transplantation. A com. available UCA was dissolved in salt soln. and irradiated by XeCl excimer laser beam in order to obtain a mixt. of cis- and trans-isomers. The immunosuppressive effect of irradiated UCA, compared to controls, unirradiated UCA and salt soln., was evaluated in a high-risk orthotopic corneal transplantation model; the agents were administered subconjunctivally to rabbits. The rejection reaction was obsd. in all animals. The mean graft survival time in rabbits administered salt soln. or unirradiated UCA was 20 days and 22 days, resp. The irradiated soln. of UCA significantly ($P<0.01$, Mantel-Cox test) prolonged mean graft survival time to 29 days. Subconjunctival administration of irradiated UCA prolonged the graft survival time in comparison with unirradiated UCA or salt soln. in recipients in a rabbit transplantation model. Although further studies are necessary, UCA seems to be an effective immunosuppressive drug after corneal transplantation.

ST **urocanic acid** graft rejection transplant immunosuppressant

IT Transplant and Transplantation
Transplant and Transplantation
(allotransplant, cornea; immunosuppressant **urocanic acid** affect on graft rejection in corneal transplantation)

IT Eye
Eye
(cornea, allotransplant; immunosuppressant **urocanic acid** affect on graft rejection in corneal transplantation)

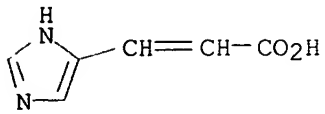
IT **Immunosuppressants**
Transplant rejection
(immunosuppressant **urocanic acid** affect on graft rejection in corneal transplantation)

IT **104-98-3, Urocanic acid**
RL: **BAC (Biological activity or effector, except adverse)**; BSU (Biological study, unclassified); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(immunosuppressant **urocanic acid** affect on graft rejection in corneal transplantation)

IT **104-98-3, Urocanic acid**
RL: **BAC (Biological activity or effector, except adverse)**; BSU (Biological study, unclassified); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(immunosuppressant **urocanic acid** affect on graft rejection in corneal transplantation)

RN 104-98-3 HCAPLUS

CN 2-Propenoic acid, 3-(1H-imidazol-4-yl)- (9CI) (CA INDEX NAME)



L63 ANSWER 9 OF 13 HCAPLUS COPYRIGHT 2003 ACS

AN **1995:452310** HCAPLUS

DN **122:222867**

TI Antioxidants and metabolic regulators for treatment of atopic dermatitis, pruritis, pruritic psoriasis, photodermatosis, ichthyosis, and hyperreactive conditions of sensitive skin

IN Staeb, Franz; Sauermann, Gerhard; Keyhani, Reza

PA Beiersdorf A.-G., Germany

SO Ger. Offen., 16 pp.

CODEN: GWXXBX
DT Patent
LA German
IC ICM A61K007-44
ICS A61K007-48; A61K007-08
CC 63-6 (**Pharmaceuticals**)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4328871	A1	19950302	DE 1993-4328871	19930827
	WO 9505852	A1	19950302	WO 1994-EP2831	19940826
	W: CN, JP, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 721347	A1	19960717	EP 1994-925480	19940826
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL				
	JP 09501925	T2	19970225	JP 1994-507355	19940826
PRAI	DE 1993-4328871		19930827		
	WO 1994-EP2831		19940826		

AB Antioxidants and agents which maintain skin metab. at a normal level and/or regulate the endogenous enzymic antioxidant system are useful for prophylaxis and treatment of the title skin conditions. Pharmaceuticals and topical prepns. contg. combinations of these agents are provided. Thus, a combination of active agents contained carnosine 3.0, histidine 0.8, **urocanic acid** 1.0, .beta.-carotene 0.5, palmitoylcystine 0.2, Mg ascorbyl palmitate 2.0, vitamin E acetate 3.5, oleylglutathione 0.2, glucosylcystamine 0.04, oleic acid 0.3, heptadecenoic acid 0.02, butylated hydroxyanisole 0.5, FADH2 0.02, glucose 6-phosphate 0.06, NADPH 0.05, and ubiquinol 0.5 wt. parts. A lotion contained this combination 25.00, Cremophor A25 1.000, Cremophor A6 1.000, glycerin mono/distearate 2.000, cetyl alc. 1.000, iso-Pr myristate 1.450, glycerin 1.000, PVP 0.500, and water to 100.000 wt.%.

ST skin disease antioxidant metab regulator

IT Acne
Antioxidants
Dermatitis
Pruritus
Psoriasis
Skin, disease
(antioxidants and metabolic regulators for treatment of atopic dermatitis, pruritis, psoriasis, photodermatosis, ichthyosis, and hyperreactive conditions of sensitive skin)

IT Skin, disease
(aging, antioxidants and metabolic regulators for treatment of atopic dermatitis, pruritis, psoriasis, photodermatosis, ichthyosis, and hyperreactive conditions of sensitive skin)

IT Enzymes
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(antioxidant, antioxidants and metabolic regulators for treatment of atopic dermatitis, pruritis, psoriasis, photodermatosis, ichthyosis, and hyperreactive conditions of sensitive skin)

IT Dermatitis
Eczema
(atopic, antioxidants and metabolic regulators for treatment of atopic dermatitis, pruritis, psoriasis, photodermatosis, ichthyosis, and hyperreactive conditions of sensitive skin)

IT Animal metabolism
(energy, antioxidants and metabolic regulators for treatment of atopic dermatitis, pruritis, psoriasis, photodermatosis, ichthyosis, and hyperreactive conditions of sensitive skin)

IT Skin, disease
(ichthyosis, antioxidants and metabolic regulators for treatment of

atopic dermatitis, pruritis, psoriasis, photodermatosis, ichthyosis, and hyperreactive conditions of sensitive skin)

IT Dermatitis
(neuro-, antioxidants and metabolic regulators for treatment of atopic dermatitis, pruritis, psoriasis, photodermatosis, ichthyosis, and hyperreactive conditions of sensitive skin)

IT Skin, disease
(photodermatosis, antioxidants and metabolic regulators for treatment of atopic dermatitis, pruritis, psoriasis, photodermatosis, ichthyosis, and hyperreactive conditions of sensitive skin)

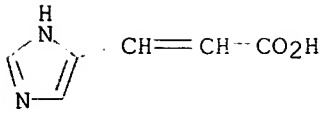
IT Ubiquinones
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(reduced, antioxidants and metabolic regulators for treatment of atopic dermatitis, pruritis, psoriasis, photodermatosis, ichthyosis, and hyperreactive conditions of sensitive skin)

IT Dermatitis
(seborrheic, antioxidants and metabolic regulators for treatment of atopic dermatitis, pruritis, psoriasis, photodermatosis, ichthyosis, and hyperreactive conditions of sensitive skin)

IT 50-81-7, Vitamin C, biological studies 50-99-7, D-Glucose, biological studies 50-99-7D, D-Glucose, cystamine derivs. 51-85-4D, Cystamine, glucose derivs. 52-90-4, L-Cysteine, biological studies 53-57-6, NADPH 56-40-6, Glycine, biological studies 56-73-5, Glucose 6-phosphate 58-85-5, D-Biotin 58-95-7, Vitamin E acetate 59-30-3, Folic acid, biological studies 60-18-4, L-Tyrosine, biological studies 69-93-2, Uric acid, biological studies 70-18-8, Glutathione, biological studies 71-00-1, L-Histidine, biological studies 77-92-9, biological studies 79-81-2, Vitamin A palmitate 83-86-3, Phytic acid **104-98-3**, **Urocanic acid** 112-80-1, Oleic acid, biological studies 137-66-6 150-38-9, Trisodium EDTA 153-18-4 305-84-0, Carnosine 1406-18-4, Vitamin E 1910-41-4, FADH2 2629-59-6, S-Ethylcysteine 3211-76-5, Selenomethionine 3458-28-4, Mannose 5853-00-9, D-Carnosine 6915-15-7 7235-40-7, .beta.-Carotene **7699-35-6**, **cis-Urocanic acid** 10139-18-1, Glucose 1,6-diphosphate 17627-10-0 25013-16-5, Butylated hydroxyanisole 25779-79-7, N-Acetylcystine 26265-99-6, Heptadecenoic acid 28542-76-9, N-Acetylglutathione 57828-26-9, Lipoic acid 67603-49-0 67603-51-4 69522-24-3, Arlacel 481 108333-82-0 145586-82-9 161889-64-1 161889-65-2 161889-66-3 162015-51-2
RL: **BAC (Biological activity or effector, except adverse)**; BSU (Biological study, unclassified); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(antioxidants and metabolic regulators for treatment of atopic dermatitis, pruritis, psoriasis, photodermatosis, ichthyosis, and hyperreactive conditions of sensitive skin)

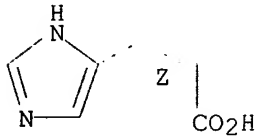
IT **104-98-3**, **Urocanic acid** **7699-35-6**, **cis-Urocanic acid**
RL: **BAC (Biological activity or effector, except adverse)**; BSU (Biological study, unclassified); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(antioxidants and metabolic regulators for treatment of atopic dermatitis, pruritis, psoriasis, photodermatosis, ichthyosis, and hyperreactive conditions of sensitive skin)

RN 104-98-3 HCAPLUS
CN 2-Propenoic acid, 3-(1H-imidazol-4-yl)- (9CI) (CA INDEX NAME)



RN 7699-35-6 HCAPLUS
CN 2-Propenoic acid, 3-(1H-imidazol-4-yl)-, (2Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



L63 ANSWER 10 OF 13 HCAPLUS COPYRIGHT 2003 ACS
AN **1994:638086** HCAPLUS
DN **121:238086**
TI **trans-Urocanic acid** as antioxidant for prevention and treatment of skin aging
IN Staeb, Franz; Sauermann, Gerhard
PA Beiersdorf A.-G., Germany
SO Ger. Offen., 13 pp.
CODEN: GWXXBX
DT Patent
LA German
IC ICM A61K007-42
ICS A61K007-48; A61K007-06
CC 62-4 (Essential Oils and **Cosmetics**)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4405585	A1	19940908	DE 1994-4405585	19940222
	DE 4405585	C2	19971211		
	WO 9420065	A1	19940915	WO 1994-EP562	19940225
	W: JP, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 687171	A1	19951220	EP 1994-909072	19940225
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL				
	JP 08507762	T2	19960820	JP 1994-519535	19940225
PRAI	DE 1993-4306591		19930303		
	WO 1994-EP562		19940225		

AB **Trans-urocanic acid** (I) is useful in cosmetic or dermatol. compns. for treatment or prophylaxis of skin aging induced by oxidative stress. I is also useful in shampoos for protection of the hair from oxidative stress. Thus, a skin lotion contained Cremophor A25 2.000, cetearyl alc. 3.000, mineral oil 5.000, propylene glycol 3.000, PVP 0.500, I 0.300, and water to 100.000 wt.%.
ST urocanate antioxidant skin aging; hair protection oxidative stress urocanate
IT **Antioxidants**
(**trans-urocanic acid** as antioxidant for prevention and treatment of skin aging)
IT **Hair preparations**
Shampoos
(**trans-urocanic acid** for hair protection from oxidative stress)
IT Skin, disease

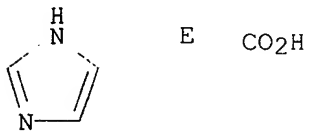
(aging, **trans-urocanic acid** as antioxidant for prevention and treatment of skin aging)

IT **3465-72-3, trans-Urocanic acid**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(antioxidant; **trans-urocanic acid** as antioxidant for prevention and treatment of skin aging)

IT **3465-72-3, trans-Urocanic acid**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(antioxidant; **trans-urocanic acid** as antioxidant for prevention and treatment of skin aging)

RN 3465-72-3 HCAPLUS
CN 2-Propenoic acid, 3-(1H-imidazol-4-yl)-, (2E)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



L63 ANSWER 11 OF 13 HCAPLUS COPYRIGHT 2003 ACS
AN **1994**:625113 HCAPLUS
DN **121**:225113
TI **Trans-urocanic acid**, a natural epidermal constituent, inhibits human natural killer cell activity in vitro
AU Uksila, Jaakko; Laihia, Jarmo K.; Jansen, Christer T.
CS Departments Medical Microbiology and Dermatology, University Turku, Turku, SF-20520, Finland
SO Experimental Dermatology (1994), 3(2), 61-5
CODEN: EXDEEY. ISSN: 0906-6705
DT Journal
LA English
CC 8-7 (Radiation Biochemistry)
AB UV irradn. has been reported to influence NK cell function both in vitro and in vivo. Since **urocanic acid** may mediate UV-induced immune modulation we tested the effect of trans- and **cis-urocanic acid** (UCA) on the cytotoxic activity of human peripheral blood lymphocytes against the erythroleukemic target cell line K562 in vitro. Trans-UCA was found to be a strong inhibitor of NK cell activity whereas cis-UCA had no effect. Trans-UCA also partially inhibited the cytotoxic function of IL-2-activated NK cells and reduced IL-2-induced activation of NK cells. This is the first report describing trans-UCA to be active, and cis-UCA inactive, in regulating an immune function. In the skin, a decrease in epidermal **trans-urocanic acid** concn. by UV radiation could produce a favorable milieu for NK cell activity, and thus counteract the impairment of antigen-specific immune surveillance, induced by increased **cis-urocanic acid** concns.
ST **urocanic acid** immunity UV; natural killer cell UV **urocanic acid**
IT **Immunity**
Ultraviolet radiation
(**trans-urocanic acid** as mediator of UV radiation-induced immune modulation with respect to inhibition of human natural killer cell activity)
IT Lymphokines and Cytokines
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study);

PROC (Process)
(interleukin 2, **trans-urocanic acid** as mediator of UV radiation-induced immune modulation with respect to inhibition of human natural killer cell activity)

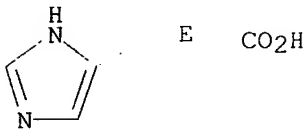
IT Lymphocyte
(natural killer cell, **trans-urocanic acid** as mediator of UV radiation-induced immune modulation with respect to inhibition of human natural killer cell activity)

IT **3465-72-3, trans-Urocanic acid**
7699-35-6, cis-Urocanic acid
RL: **BAC (Biological activity or effector, except adverse)**; BSU (Biological study, unclassified); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(**trans-urocanic acid** as mediator of UV radiation-induced immune modulation with respect to inhibition of human natural killer cell activity)

IT **3465-72-3, trans-Urocanic acid**
7699-35-6, cis-Urocanic acid
RL: **BAC (Biological activity or effector, except adverse)**; BSU (Biological study, unclassified); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(**trans-urocanic acid** as mediator of UV radiation-induced immune modulation with respect to inhibition of human natural killer cell activity)

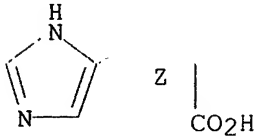
RN 3465-72-3 HCAPLUS
CN 2-Propenoic acid, 3-(1H-imidazol-4-yl)-, (2E)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



RN 7699-35-6 HCAPLUS
CN 2-Propenoic acid, 3-(1H-imidazol-4-yl)-, (2Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



L63 ANSWER 12 OF 13 HCAPLUS COPYRIGHT 2003 ACS
AN 1994:491288 HCAPLUS
DN 121:91288
TI Inhibition of hyaluronic acid depolymerization caused by reactive oxygen
AU Akashi, Yoko; Suetsugu, Kazuhiro; Tanaka, Hiroshi
CS Naris Cosmet. Co., Ltd., Res. Lab., Fukushima, 533, Japan
SO Nippon Koshohin Kagakkaishi (1993), 17(4), 207-13
CODEN: NKKAEV; ISSN: 0287-1238
DT Journal
LA Japanese
CC 62-4 (Essential Oils and Cosmetics)
AB Being an exterior of a human body, skin is continually exposed to reactive oxygen originated from external causes like UV rays as well as internal causes. UVB injures epidermis and upper dermis, while UVA injures deep

dermis. Skin has defense systems including UV-absorbing substances such as keratin, melanin, **urocanic acid** to protect itself from these external reactive oxygen stress. In general, some enzymes and low mol. substances called **scavenger** eliminate the internal reactive oxygen. In skin, the reactive oxygen produced by penetrating UVA in deep dermis can hardly be eliminated since most **scavengers** exist in epidermis. Applying a **scavenger** such as SOD makes no effect on the skin because of its low transdermic absorbability and unstability. To solve this problem, some low mol. **scavengers** for hydroxyl radical are unknown. Hydroxyl radical injures organisms seriously; it promotes collagen crosslinking and hyaluronic acid depolymn. The authors, first, confirmed the depolymn. of hyaluronic acid by reactive oxygen in ascorbic acid-Fe system or UVA-irradn., and second, screened plant exts. to find effective materials on inhibiting this depolymn. In result, Myricarubra, Rhus chinensis, and Poeonia albiflora strongly inhibited the depolymn. in the ascorbic acid-Fe system. On irradiating UVA, Myrica rubra, and Rhus chinensis inhibited the depolymn. Coptis chinensis, which absorbs UVA, also inhibited the depolymn. by UVA.

ST hyaluronate depolymn radical antioxidant; oxygen radical hyaluronate depolymn

IT Plant
(antioxidants, hyaluronic acid depolymn. by radicals prevention by)

IT **Antioxidants**
(hyaluronic acid depolymn. by radicals prevention by)

IT **Radicals, biological studies**
RL: RCT (Reactant); RACT (Reactant or reagent)
(hyaluronic acid depolymn. by, prevention of)

IT Depolymerization
(acid, of hyaluronic, by radicals, prevention of)

IT 9004-61-9, Hyaluronic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(depolymn. of, by radicals, prevention of)

IT **3352-57-6**, Hydroxyl, biological studies 7782-44-7D, Oxygen, radicals, biological studies
RL: RCT (Reactant); RACT (Reactant or reagent)
(hyaluronic acid depolymn. by, prevention of)

IT **3352-57-6**, Hydroxyl, biological studies
RL: RCT (Reactant); RACT (Reactant or reagent)
(hyaluronic acid depolymn. by, prevention of)

RN 3352-57-6 HCAPLUS

CN Hydroxyl (8CI, 9CI) (CA INDEX NAME)

HO

L63 ANSWER 13 OF 13 HCAPLUS COPYRIGHT 2003 ACS

AN 1994:279859 HCAPLUS

DN 120:279859

TI Cosmetic and dermatological sunscreen formulations containing **cis-urocanic acid**

IN Staeb, Franz; Sauermann, Gerhard; Uhlmann, Beate

PA Beiersdorf A.-G., Germany

SO Ger. Offen., 14 pp.
CODEN: GWXXBX

DT Patent

LA German

IC ICM A61K007-44
ICS A61K007-50; A61K007-11; A61K007-09; A61K007-13; A61K007-08; A61K007-075; C09K015-30

ICA A61K007-027; A61K007-043; A61K007-48; C09K015-06; C09K015-10; C09K015-20; C09K003-30; B01F017-00

CC 62-4 (Essential Oils and **Cosmetics**)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4230076	A1	19940310	DE 1992-4230076	19920909
	DE 4230076	C2	19951214		
	EP 586961	A1	19940316	EP 1993-113546	19930825
	EP 586961	B1	19971126		
	R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, PT, SE				
	AT 160502	E	19971215	AT 1993-113546	19930825
	ES 2111102	T3	19980301	ES 1993-113546	19930825
	US 5620680	A	19970415	US 1993-115528	19930902
PRAI	DE 1992-4230076		19920909		

AB **Cis-urocanic acid** (I), or a mixt. of I and **trans-urocanic acid**, is useful as a sunscreen, radical **scavenger**, and/or antioxidant in cosmetic and dermatol. compns. I is a UV B absorber, and may be used in combination with a UV A absorber. Thus, a water-in-oil cream contained Arlacel 481 6.000, Lunacera M (microcryst. wax) 1.000, neutral oil 3.000, paraffin oil 19.000, Mg stearate 1.000, propylene glycol 3.700, MgSO4.7H2O 0.700, I 1.000, and water to 100.000 wt.%.

ST urocanate sunscreen antioxidant radical **scavenger**

IT **Antioxidants**
Sunscreens
(cis-urocanate)

IT **Bath** preparations
Cosmetics
Hair preparations
Pharmaceutical dosage forms
Shampoos
(cis-urocanate in, as antioxidant and sunscreen)

IT **Radicals, biological studies**
RL: BIOL (Biological study)
(**scavengers** for, cis-urocanate as)

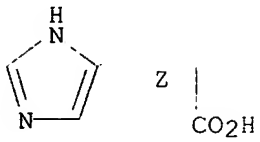
IT **7699-35-6, cis-Urocanic acid**
RL: BIOL (Biological study)
(cosmetic and dermatol. prepns. contg., as antioxidant and sunscreen)

IT **7699-35-6, cis-Urocanic acid**
RL: BIOL (Biological study)
(cosmetic and dermatol. prepns. contg., as antioxidant and sunscreen)

RN 7699-35-6 HCAPLUS

CN 2-Propenoic acid, 3-(1H-imidazol-4-yl)-, (2Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



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FILE 'REGISTRY' ENTERED AT 16:42:02 ON 03 MAR 2003

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 2 MAR 2003 HIGHEST RN 496764-40-0
DICTIONARY FILE UPDATES: 2 MAR 2003 HIGHEST RN 496764-40-0

TSCA INFORMATION NOW CURRENT THROUGH MAY 20, 2002

Please note that search-term pricing does apply when conducting SmartSELECT searches.

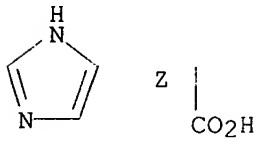
Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

=> d ide can tot l6

L6 ANSWER 1 OF 3 REGISTRY COPYRIGHT 2003 ACS
RN 7699-35-6 REGISTRY
CN **2-Propenoic acid, 3-(1H-imidazol-4-yl)-, (2Z)- (9CI)** (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN **2-Propenoic acid, 3-(1H-imidazol-4-yl)-, (Z)-**
CN **Imidazole-4-acrylic acid, (Z)- (8CI)**
OTHER NAMES:
CN (Z)-Urocanic acid
CN cis-Urocanic acid
FS STEREOSEARCH
MF **C6 H6 N2 O2**
CI COM
LC STN Files: AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, CA, CAPLUS, CASREACT, CHEMINFORMRX, IPA, PROMT, TOXCENTER, USPATFULL
(*File contains numerically searchable property data)

Double bond geometry as shown.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

207 REFERENCES IN FILE CA (1962 TO DATE)
2 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
207 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE 1: 138:144950

REFERENCE 2: 138:102962

REFERENCE 3: 138:69001

REFERENCE 4: 138:68957

REFERENCE 5: 137:306814

REFERENCE 6: 137:243966

REFERENCE 7: 137:216584

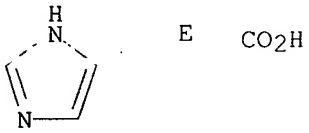
REFERENCE 8: 137:197553

REFERENCE 9: 137:163217

REFERENCE 10: 137:68183

L6 ANSWER 2 OF 3 REGISTRY COPYRIGHT 2003 ACS
RN 3465-72-3 REGISTRY
CN **2-Propenoic acid, 3-(1H-imidazol-4-yl)-, (2E)- (9CI)** (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN **2-Propenoic acid, 3-(1H-imidazol-4-yl)-, (E)-**
CN **Imidazole-4-acrylic acid, (E)- (8CI)**
OTHER NAMES:
CN **(E)-3-(4-Imidazolyl)acrylic acid**
CN **(E)-3-(Imidazol-4-yl)-2-propenoic acid**
CN (E)-Urocanic acid
CN **trans-Urocanic acid**
FS STEREOSEARCH
DR 7699-36-7
MF **C6 H6 N2 O2**
CI COM
LC STN Files: ANABSTR, BEILSTEIN*, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS, CHEMINFORMRX, CHEMLIST, IPA, PROMT, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)

Double bond geometry as shown.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

190 REFERENCES IN FILE CA (1962 TO DATE)
2 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
191 REFERENCES IN FILE CAPLUS (1962 TO DATE)
1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 138:144950

REFERENCE 2: 138:55742

REFERENCE 3: 137:306814

REFERENCE 4: 137:216584

REFERENCE 5: 137:197553

REFERENCE 6: 137:68183

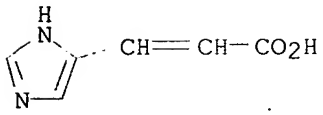
REFERENCE 7: 137:63420

REFERENCE 8: 136:352070

REFERENCE 9: 136:348163

REFERENCE 10: 136:279454

L6 ANSWER 3 OF 3 REGISTRY COPYRIGHT 2003 ACS
RN 104-98-3 REGISTRY
CN **2-Propenoic acid, 3-(1H-imidazol-4-yl)- (9CI)** (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN **Imidazole-4-acrylic acid (8CI)**
OTHER NAMES:
CN **3-(1H-Imidazol-4-yl)acrylic acid**
CN **3-(4-Imidazolyl)acrylic acid**
CN 5-Imidazoleacrylic acid
CN **Urocanic acid**
CN Urocaninic acid
FS 3D CONCORD
MF **C6 H6 N2 O2**
CI COM
LC STN Files: AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, DDFU, DRUGU, EMBASE, HODOC*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, NAPRALERT, PROMT, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: EINECS**, NDSL**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

477 REFERENCES IN FILE CA (1962 TO DATE)
35 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
477 REFERENCES IN FILE CAPLUS (1962 TO DATE)
35 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 138:106652

REFERENCE 2: 137:315752

REFERENCE 3: 137:306814

REFERENCE 4: 137:259349

REFERENCE 5: 137:243966

REFERENCE 6: 137:232671

REFERENCE 7: 137:228376

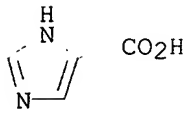
REFERENCE 8: 137:181637

REFERENCE 9: 137:63420

REFERENCE 10: 137:52036

=> d ide can 17

L7 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2003 ACS
RN 1072-84-0 REGISTRY
CN 1H-Imidazole-4-carboxylic acid (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Imidazole-4(or 5)-carboxylic acid (6CI, 7CI)
CN **Imidazole-4-carboxylic acid (8CI)**
OTHER NAMES:
CN 4-Carboxyimidazole
CN Imidazole-5-carboxylic acid
FS 3D CONCORD
MF C4 H4 N2 O2
CI COM
LC STN Files: BEILSTEIN*, BIOBUSINESS, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS, CHEMLIST, CSCHEM, IFICDB, IFIPAT, IFIUDB, RTECS*, SPECINFO, TOXCENTER, USPATFULL
(*File contains numerically searchable property data)
Other Sources: EINECS**
(**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

105 REFERENCES IN FILE CA (1962 TO DATE)
5 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
106 REFERENCES IN FILE CAPLUS (1962 TO DATE)
13 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 138:39183

REFERENCE 2: 138:14012

REFERENCE 3: 138:4614

REFERENCE 4: 137:370092

REFERENCE 5: 137:325705

REFERENCE 6: 137:310919

REFERENCE 7: 137:201606

REFERENCE 8: 137:155265

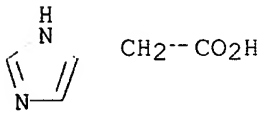
REFERENCE 9: 137:78954

REFERENCE 10: 136:279196

=> d ide can 18

L8 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2003 ACS
RN 645-65-8 REGISTRY
CN 1H-Imidazole-4-acetic acid (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Imidazole-4(or 5)-acetic acid (6CI)
CN **Imidazole-4-acetic acid (8CI)**

OTHER NAMES:
CN (Imidazol-4-yl)acetic acid
CN Imidazol-4(5)-ylacetic acid
CN Imidazoleacetic acid
FS 3D CONCORD
DR 873-79-0
MF C5 H6 N2 O2
CI COM
LC STN Files: AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CAOLD, CAPLUS, CASREACT, CSCHEM, DDFU, DRUGU, EMBASE, IFICDB, IFIPAT, IFIUDB, NIOSHTIC, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

444 REFERENCES IN FILE CA (1962 TO DATE)
9 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
445 REFERENCES IN FILE CAPLUS (1962 TO DATE)
27 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 138:78497

REFERENCE 2: 138:37373

REFERENCE 3: 137:382428

REFERENCE 4: 137:370092

REFERENCE 5: 137:310695

REFERENCE 6: 137:211038

REFERENCE 7: 137:63420

REFERENCE 8: 136:380273

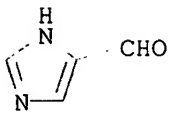
REFERENCE 9: 136:380123

REFERENCE 10: 136:32032

=> d ide can 19

L9 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2003 ACS
RN 3034-50-2 REGISTRY
CN 1H-Imidazole-4-carboxaldehyde (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Imidazole-4(or 5)-carboxaldehyde (6CI, 7CI)
CN **Imidazole-4-carboxaldehyde (8CI)**
OTHER NAMES:
CN 1H-Imidazol-4-ylcarboxaldehyde
CN 1H-Imidazole-5-carboxaldehyde
CN 3H-Imidazole-4-carboxaldehyde
CN 4(5)-Imidazolecarboxaldehyde
CN 4-Formylimidazole

CN 5-Imidazolecarboxaldehyde
FS 3D CONCORD
MF C4 H4 N2 O
CI COM
LC STN Files: BEILSTEIN*, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS, CHEMINFORMRX, CHEMLIST, CSCHEM, GMELIN*, IFICDB, IFIPAT, IFIUDB, SYNTHLINE, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: EINECS**
(**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

230 REFERENCES IN FILE CA (1962 TO DATE)
3 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
230 REFERENCES IN FILE CAPLUS (1962 TO DATE)
6 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 138:122649

REFERENCE 2: 138:89821

REFERENCE 3: 138:55961

REFERENCE 4: 138:24718

REFERENCE 5: 138:24639

REFERENCE 6: 138:11404

REFERENCE 7: 138:4531

REFERENCE 8: 137:370092

REFERENCE 9: 137:370084

REFERENCE 10: 137:365992

=> fil medline
FILE 'MEDLINE' ENTERED AT 16:49:20 ON 03 MAR 2003

FILE LAST UPDATED: 2 MAR 2003 (20030302/UP). FILE COVERS 1958 TO DATE.

On June 9, 2002, MEDLINE was reloaded. See HELP RLOAD for details.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2003 vocabulary. See http://www.nlm.nih.gov/mesh/summ2003.html for a description on changes.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d all tot 178

L78 ANSWER 1 OF 5 MEDLINE
AN **2001347143** MEDLINE
DN **21303082** PubMed ID: **11410337**
TI Oxidative breakdown and conversion of **urocanic acid** isomers by hydroxyl radical generating systems.
AU **Kammeyer** A; Eggelte T A; Overmars H; Bootsma A; Bos J D; Teunissen M B
CS Department of Dermatology, Academic Medical Center, University of Amsterdam, The Netherlands.. a.kammeyer@amc.uva.nl
SO BIOCHIMICA ET BIOPHYSICA ACTA, (2001 Jun 15) 1526 (3) 277-85. Journal code: 0217513. ISSN: 0006-3002.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200107
ED Entered STN: 20010730
Last Updated on STN: 20010730
Entered Medline: 20010726
AB **cis-Urocanic acid** (cis-UCA), formed from **trans-urocanic acid** (trans-UCA) by photoisomerization, has been shown to mimic suppressive effects of UV on the immune system. It is our hypothesis that UCA oxidation products in the skin play a role in the process of immunosuppression. Recently, both UCA isomers were found to be good hydroxyl radical scavengers and in this context we investigated the formation of products resulting from the interaction of hydroxyl radicals with UCA. Hydroxyl radicals were generated by (1) UV/H(2)O(2) (photooxidation), (2) ferrous ions/H(2)O(2) (Fenton oxidation) and (3) cupric ions/ascorbic acid. Oxidation products were identified by spectrometric methods and assessed by reversed-phase HPLC analysis. The photooxidation of UCA was induced by UV-B and UV-C, but not by UV-A radiation. Photooxidation and Fenton oxidation of trans-UCA, as well as of cis-UCA yielded comparable chromatographic patterns of UCA oxidation products. Several of the formed products were identified. The formation of three identified imidazoles was shown in UV-B exposed corneal layer samples, derived from human skin.
CT Check Tags: Human
Buffers
Chromatography, High Pressure Liquid
Edetic Acid
***Free Radical Scavengers: CH, chemistry**
Hydrogen Peroxide
*Hydroxyl Radical: CS, chemical synthesis
Imidazoles: AN, analysis
Iron
Oxidation-Reduction
Photochemistry
Skin: CH, chemistry
Skin: RE, radiation effects
Stereoisomerism
Ultraviolet Rays
Urocanic Acid: AN, analysis
***Urocanic Acid: CH, chemistry**
Urocanic Acid: RE, radiation effects
RN **104-98-3 (Urocanic Acid)**; 30581-89-6 (imidazoleacetic acid); 3352-57-6 (Hydroxyl Radical); 60-00-4 (Edetic Acid); 7439-89-6 (Iron); 7722-84-1 (Hydrogen Peroxide)
CN 0 (Buffers); 0 (Fenton's reagent); 0 (Free Radical Scavengers); 0 (Imidazoles)

L78 ANSWER 2 OF 5 MEDLINE
AN **1999296407** MEDLINE
DN **99296407** PubMed ID: **10366766**

TI **Urocanic acid** isomers are good hydroxyl radical scavengers: a comparative study with structural analogues and with uric acid.
AU **Kammeyer** A; Eggelte T A; Bos J D; Teunissen M B
CS Department of Dermatology, Academic Medical Centre, P.O. Box 22660, 1100 DD, Amsterdam, The Netherlands.. a.kammeyer@amc.uva.nl
SO BIOCHIMICA ET BIOPHYSICA ACTA, (1999 Jun 28) 1428 (1) 117-20. Journal code: 0217513. ISSN: 0006-3002.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199907
ED Entered STN: 19990806
Last Updated on STN: 19990806
Entered Medline: 19990729
AB UV-exposure of the epidermis leads to the isomerisation of trans-UCA into cis-UCA as well as to the generation of hydroxyl radicals. This study shows by means of the deoxyribose degradation test that UCA isomers are more powerful hydroxyl radical scavengers than the other 4-(5-)substituted imidazole derivatives, such as histidine, though less powerful than uric acid. UCA, present in relatively high concentrations in the epidermis, may well be a major natural hydroxyl radical scavenger.
CT Check Tags: Comparative Study; Human
Deoxyribose
***Free Radical Scavengers: CH, chemistry**
*Hydroxyl Radical: CH, chemistry
Isomerism
Molecular Structure
Skin: CH, chemistry
*Skin: RE, radiation effects
*Uric Acid: CH, chemistry
Urocanic Acid: AA, analogs & derivatives
***Urocanic Acid: CH, chemistry**
RN **104-98-3 (Urocanic Acid)**; 3352-57-6 (Hydroxyl Radical); 533-67-5 (Deoxyribose); 69-93-2 (Uric Acid)
CN 0 (Free Radical Scavengers)

L78 ANSWER 3 OF 5 MEDLINE
AN 97231882 MEDLINE
DN 97231882 PubMed ID: 9077146
TI Prolonged increase of **cis-urocanic acid** levels in human skin and urine after single total-body ultraviolet exposures.
AU **Kammeyer** A; Pavel S; Asghar S S; Bos J D; Teunissen M B
CS Department of Dermatology, University of Amsterdam, The Netherlands,. A.Kammeyer@AMC.UVA.NL
SO PHOTOCHEMISTRY AND PHOTOBIOLOGY, (1997 Mar) 65 (3) 593-8. Journal code: 0376425. ISSN: 0031-8655.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199704
ED Entered STN: 19970424
Last Updated on STN: 19970424
Entered Medline: 19970415
AB **Cis-urocanic acid** (cis-UCA), a mediator of immunosuppression, is formed from trans-UCA upon UV-exposure of the skin. This study describes a liquid chromatographic method for the simultaneous quantification of cis- and trans-UCA in skin, urine and plasma of nonirradiated volunteers. It also describes cis- and trans-UCA kinetics in UV-irradiated volunteers. New procedures to remove interfering substances

from urine and plasma are reported. Normal levels of cis-UCA in skin, urine and plasma of nonirradiated volunteers were 0.5 nmol/cm2, 0.03 mumol/mmol creatinine (median 0.00) and undetectable and those of trans-UCA were 17.1 nmol/cm2, 1.36 mumol/ mmol creatinine and 0.5 microM, respectively. Upon single total body UVB (290-320 nm) exposures of 250 J/m2, epidermal cis-UCA levels immediately reached a maximum and returned to basic levels 3 weeks later. The cis-UCA levels in urine reached a maximum in 5-12 h postirradiation and reached baseline values in 8-12 days. Additionally, a single total body UVA (320-400 nm) irradiation of 200 kJ/m2 yielded a similar pattern. The kinetics of cis-UCA in plasma could not be followed due to low concentrations; however, that of skin and urine was informative in relation to solar exposures and phototherapy.

CT Check Tags: Case Report; Female; Human; Male
Adolescence
Adult
Chromatography, High Pressure Liquid
Middle Age
Skin: ME, metabolism
Skin: RE, radiation effects
*Ultraviolet Rays
Urocanic Acid: BL, blood
***Urocanic Acid: ME, metabolism**
Urocanic Acid: UR, urine

RN **104-98-3 (Urocanic Acid)**

L78 ANSWER 4 OF 5 MEDLINE
AN 97085792 MEDLINE
DN 97085792 PubMed ID: 8931879
TI **cis-urocanic acid** is not useful as an immunosuppressive agent in the treatment of human allergic contact dermatitis.
CM Comment on: Arch Dermatol Res. 1995;287(6):564-6
AU **Kammeyer** A; Meinardi M M; Bos J D; Teunissen M B
SO ARCHIVES OF DERMATOLOGICAL RESEARCH, (1996 Oct) 288 (11) 725-7. Journal code: 8000462. ISSN: 0340-3696.
CY GERMANY: Germany, Federal Republic of
DT (CLINICAL TRIAL)
Commentary
(CONTROLLED CLINICAL TRIAL)
Letter
LA English
FS Priority Journals
EM 199703
ED Entered STN: 19970414
Last Updated on STN: 19980206
Entered Medline: 19970328
CT Check Tags: Human
Administration, Topical
Allergens: AD, administration & dosage
*Dermatitis, Allergic Contact: DT, drug therapy
Immunosuppressive Agents: AD, administration & dosage
Immunosuppressive Agents: CH, chemistry
*Immunosuppressive Agents: TU, therapeutic use
Patch Tests
Stereoisomerism
Urocanic Acid: AD, administration & dosage
Urocanic Acid: CH, chemistry
***Urocanic Acid: TU, therapeutic use**
RN **104-98-3 (Urocanic Acid)**
CN 0 (Allergens); 0 (Immunosuppressive Agents)

L78 ANSWER 5 OF 5 MEDLINE
AN 95391546 MEDLINE

DN 95391546 PubMed ID: 7662566
TI Photoisomerization spectrum of **urocanic acid** in human skin and in vitro: effects of simulated solar and artificial ultraviolet radiation.
AU **Kammeyer** A; Teunissen M B; Pavel S; de Rie M A; Bos J D
CS Department of Dermatology, University of Amsterdam, The Netherlands.
SO BRITISH JOURNAL OF DERMATOLOGY, (1995 Jun) 132 (6) 884-91.
Journal code: 0004041. ISSN: 0007-0963.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199510
ED Entered STN: 19951020
Last Updated on STN: 19951020
Entered Medline: 19951010
AB Ultraviolet (UV) irradiation of **trans-urocanic acid** (UCA), a major UV absorbing component of the epidermis, leads to the formation of cis-UCA, which mediates immunosuppressive effects. In this study, the net yield of cis-UCA was measured after the photoisomerization of **urocanic acid** by narrow UV wavebands (spectral range 295-405 nm), with the irradiation doses related to solar irradiance at sea level. The formation of cis-UCA in Caucasian skin (in vivo), as well as in aqueous solution (in vitro), was determined by HPLC analysis. The same irradiation conditions were met in both components of the study. The in vivo experiments showed high efficiency of cis-UCA formation in the spectral region of 305-341 nm, whereas high efficiency in vitro was found at 305 and 326 nm. At 350 and 363 nm, cis-UCA was formed in vivo, but not in vitro. At longer test wavelengths up to 405 nm, no significant formation of cis-UCA was detectable. The established partition between UVB and UVA at 320 nm is not relevant for the isomerization pattern of UCA. Additional studies revealed substantial cis-UCA formation in human skin by UVA phototherapy lamps. Furthermore, raised levels of 295 nm irradiation doses, a possible effect of stratospheric ozone depletion, were found to increase the cis-UCA yield. Our results demonstrate that the formation of cis-UCA in the skin with common exposures takes place over a broad spectrum range of UVB and UVA, up to at least 363 nm. These findings emphasize the potency of UVA to isomerize UCA, and they may contribute to further elucidation of the effects of phototherapy and sunbathing.
CT Check Tags: Human
Caucasoid Race
Chromatography, High Pressure Liquid
Isomerism
*Light
Phototherapy
*Skin: RE, radiation effects
Stereoisomerism
*Ultraviolet Rays
***Urocanic Acid: CH, chemistry**
RN **104-98-3 (Urocanic Acid)**

=> fil embase
FILE 'EMBASE' ENTERED AT 17:02:19 ON 03 MAR 2003

FILE COVERS 1974 TO 27 Feb 2003 (20030227/ED)

EMBASE has been reloaded. Enter HELP RLOAD for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d l83 all tot

L83 ANSWER 1 OF 5 EMBASE COPYRIGHT 2003 ELSEVIER SCI. B.V.
AN **2001247420** EMBASE
TI The enhancement of riboflavin-mediated photo-oxidation of doxorubicin by histidine and **urocanic acid**.
AU Ramu A.; Mehta M.M.; Leaseburg T.; Aleksic A.
CS A. Ramu, Texas Children's Cancer Center, Texas Children's Hospital, Baylor College of Medicine, 6621 Fannin Street, Houston, TX 77030-2399, United States. aramu@bcm.tmc.edu
SO Cancer Chemotherapy and Pharmacology, (2001) 47/4 (338-346).
Refs: 15
ISSN: 0344-5704 CODEN: CCPHDZ
CY Germany
DT Journal; Article
FS 030 Pharmacology
037 Drug Literature Index
LA English
SL English
AB Purpose: Previously we have shown that doxorubicin (Adriamycin, ADR) can be inactivated by light-excited riboflavin. The inactivation of the drug results from its direct oxidation by the excited triplet riboflavin in a type I photosensitization reaction, and 3-methoxysalicylic acid is an ADR breakdown product. In the present study, we investigated the enhancement of this process by histidine and some other imidazole analogs. Methods: ADR solutions containing various concentrations of riboflavin and other agents were exposed to 365 nm light for various time periods and then the absorbance spectrum of ADR was measured by a double beam spectrophotometer. These measurement were used to calculate the half-time of the ADR degradation process. The degraded ADR solutions were analyzed by HPLC. Results: The rate of bleaching of ADR by light-excited riboflavin was enhanced in the presence of histidine in a concentration-dependent manner. This enhancement was more pronounced at higher riboflavin concentrations. Histidine also enhanced the riboflavin-mediated photobleaching of N,N-dimethyl-4-nitrosoaniline (RNO), a compound known to be resistant to oxidation by singlet oxygen but sensitive to oxidation by the trans-annular peroxide of histidine. RNO was found to block the histidine enhancement of the riboflavin-mediated photobleaching of ADR in a competitive manner. Among the imidazole analogs of histidine tested, **urocanic acid** was found to be the most efficient enhancer of the riboflavin-mediated photobleaching of ADR. Superoxide anion radicals which retard the oxidation of ADR were quenched by **urocanic acid** but not by histidine. It was shown that the oxidation of ADR by the trans-annular peroxide of histidine resulted in the formation of 3-methoxysalicylic acid. Conclusions: In contrast to singlet oxygen, the trans-annular peroxide, formed by the interaction of histidine and the singlet oxygen produced by photoexcited riboflavin, is an efficient oxidizer of ADR. The enhancement of the riboflavin-mediated photobleaching of ADR by histidine analogs depends on the rate of their conversion to a trans-annular peroxide and on the efficiency of these products in oxidizing ADR. However, for some analogs of histidine, as shown for **urocanic acid**, other mechanisms could also be involved. The presence of **urocanic acid** in the skin suggests that significant degradation of ADR could occur in the presence of biologically relevant concentrations of riboflavin if patients treated with ADR are exposed to sunlight. The finding that histidine also enhanced the degradation of ADR to 3-methoxysalicylic acid, suggests that the process of ADR oxidation by the trans-annular peroxides is similar to the direct oxidation of ADR by excited triplet riboflavin.
CT Medical Descriptors:
*photooxidation
*cancer chemotherapy

*drug mechanism
drug cross reactivity
photosensitization
concentration response
half life time
binding competition
bleaching
drug degradation
article
priority journal
Drug Descriptors:
*riboflavin: CB, drug combination
*riboflavin: IT, drug interaction
*riboflavin: PD, pharmacology
*doxorubicin: CB, drug combination
*doxorubicin: IT, drug interaction
*doxorubicin: PD, pharmacology
*histidine: CB, drug combination
*histidine: IT, drug interaction
*histidine: PD, pharmacology
***urocanic acid: CB, drug combination**
***urocanic acid: IT, drug interaction**
***urocanic acid: PD, pharmacology**
superoxide
singlet oxygen
n,n dimethyl 4 nitrosoaniline
aniline derivative
3 methoxysalicylic acid
unclassified drug
RN (riboflavin) 83-88-5; (doxorubicin) 23214-92-8, 25316-40-9; (histidine) 645-35-2, 7006-35-1, 71-00-1; (**urocanic acid**) **104-98**-3; (superoxide) 11062-77-4; (n,n dimethyl 4 nitrosoaniline) 138-89-6
CN (1) Adriamycin
CO (1) Pharmacia (United States); Sigma Aldrich (United States)

L83 ANSWER 2 OF 5 EMBASE COPYRIGHT 2003 ELSEVIER SCI. B.V.
AN **2001211235** EMBASE
TI Oxidative breakdown and conversion of **urocanic acid** isomers by hydroxyl radical generating systems.
AU Kammeyer A.; Eggelte T.A.; Overmars H.; Bootsma A.; Bos J.D.; Teunissen M.B.M.
CS A. Kammeyer, Department of Dermatology, Academic Medical Center, University of Amsterdam, P.O. Box 22700, 1100 DE Amsterdam, Netherlands. a.kammeyer@amc.uva.nl
SO Biochimica et Biophysica Acta - General Subjects, (15 Jun 2001) 1526/3 (277-285).
Refs: 34
ISSN: 0304-4165 CODEN: BBGSB3
PUI S 0304-4165(01)00139-8
CY Netherlands
DT Journal; Article
FS 013 Dermatology and Venereology
026 Immunology, Serology and Transplantation
029 Clinical Biochemistry
LA English
SL English
AB **cis-Urocanic acid** (cis-UCA), formed from **trans-urocanic acid** (trans-UCA) by photoisomerization, has been shown to mimic suppressive effects of UV on the immune system. It is our hypothesis that UCA oxidation products in the skin play a role in the process of immunosuppression. Recently, both UCA isomers were found to be good hydroxyl radical scavengers and in this

context we investigated the formation of products resulting from the interaction of hydroxyl radicals with UCA. Hydroxyl radicals were generated by (1) UV/H(2)O(2) (photooxidation), (2) ferrous ions/H(2)O(2) (Fenton oxidation) and (3) cupric ions/ascorbic acid. Oxidation products were identified by spectrometric methods and assessed by reversed-phase HPLC analysis. The photooxidation of UCA was induced by UV-B and UV-C, but not by UV-A radiation. Photooxidation and Fenton oxidation of trans-UCA, as well as of cis-UCA yielded comparable chromatographic patterns of UCA oxidation products. Several of the formed products were identified. The formation of three identified imidazoles was shown in UV-B exposed corneal layer samples, derived from human skin. .COPYRGT. 2001 Elsevier Science B.V.

CT Medical Descriptors:
*photooxidation
spectrometry
reversed phase high performance liquid chromatography
skin
immunosuppressive treatment
isomer
chemical interaction
ultraviolet B radiation
ultraviolet C radiation
human
controlled study
human tissue
article
priority journal
Drug Descriptors:
*ferrous ion
*copper ion
*ascorbic acid
***urocanic acid**
hydroxyl radical
hydrogen peroxide
imidazole derivative

RN (ferrous ion) 15438-31-0; (ascorbic acid) 134-03-2, 15421-15-5, 50-81-7; (**urocanic acid**) **104-98-3**; (hydroxyl radical) 3352-57-6; (hydrogen peroxide) 7722-84-1

L83 ANSWER 3 OF 5 EMBASE COPYRIGHT 2003 ELSEVIER SCI. B.V.
AN **2001181514** EMBASE
TI The enhancement of riboflavin-mediated photo-oxidation of doxorubicin by histidine and **urocanic acid**.
AU Ramu A.; Mehta M.M.; Leaseburg T.; Aleksic A.
CS A. Ramu, Texas Children's Cancer Center, Texas Children's Hospital, Baylor College of Medicine, 6621 Fannin Street, Houston, TX 77030-2399, United States. aramu@bcm.tmc.edu
SO Cancer Chemotherapy and Pharmacology, Supplement, (2001) 47/4 (338-346). Refs: 15
ISSN: 0943-9404 CODEN: CCHSET
CY Germany
DT Journal; Article
FS 030 Pharmacology
037 Drug Literature Index
LA English
SL English
AB Purpose: Previously we have shown that doxorubicin (Adriamycin, ADR) can be inactivated by light-excited riboflavin. The inactivation of the drug results from its direct oxidation by the excited triplet riboflavin in a type I photosensitization reaction, and 3-methoxysalicylic acid is an ADR breakdown product. In the present study, we investigated the enhancement of this process by histidine and some other imidazole analogs. Methods: ADR solutions containing various concentrations of riboflavin and other

agents were exposed to 365 nm light for various time periods and then the absorbance spectrum of ADR was measured by a double beam spectrophotometer. These measurement were used to calculate the half-time of the ADR degradation process. The degraded ADR solutions were analyzed by HPLC. Results: The rate of bleaching of ADR by light-excited riboflavin was enhanced in the presence of histidine in a concentration-dependent manner. This enhancement was more pronounced at higher riboflavin concentrations. Histidine also enhanced the riboflavin-mediated photobleaching of N,N-dimethyl-4-nitrosoaniline (RNO), a compound known to be resistant to oxidation by singlet oxygen but sensitive to oxidation by the trans-annular peroxide of histidine. RNO was found to block the histidine enhancement of the riboflavin-mediated photobleaching of ADR in a competitive manner. Among the imidazole analogs of histidine tested, **urocanic acid** was found to be the most efficient enhancer of the riboflavin-mediated photobleaching of ADR. Superoxide anion radicals which retard the oxidation of ADR were quenched by **urocanic acid** but not by histidine. It was shown that the oxidation of ADR by the trans-annular peroxide of histidine resulted in the formation of 3-methoxysalicylic acid. Conclusions: In contrast to singlet oxygen, the trans-annular peroxide, formed by the interaction of histidine and the singlet oxygen produced by photoexcited riboflavin, is an efficient oxidizer of ADR. The enhancement of the riboflavin-mediated photobleaching of ADR by histidine analogs depends on the rate of their conversion to a trans-annular peroxide and on the efficiency of these products in oxidizing ADR. However, for some analogs of histidine, as shown for **urocanic acid**, other mechanisms could also be involved. The presence of **urocanic acid** in the skin suggests that significant degradation of ADR could occur in the presence of biologically relevant concentrations of riboflavin if patients treated with ADR are exposed to sunlight. The finding that histidine also enhanced the degradation of ADR to 3-methoxysalicylic acid, suggests that the process of ADR oxidation by the trans-annular peroxides is similar to the direct oxidation of ADR by excited triplet riboflavin.

CT Medical Descriptors:
*photooxidation
*cancer chemotherapy
*drug mechanism
drug cross reactivity
photosensitization
concentration response
half life time
binding competition
bleaching
drug degradation
article
priority journal
Drug Descriptors:
*riboflavin: CB, drug combination
*riboflavin: IT, drug interaction
*riboflavin: PD, pharmacology
*doxorubicin: CB, drug combination
*doxorubicin: IT, drug interaction
*doxorubicin: PD, pharmacology
*histidine: CB, drug combination
*histidine: IT, drug interaction
*histidine: PD, pharmacology
***urocanic acid: CB, drug combination**
***urocanic acid: IT, drug interaction**
***urocanic acid: PD, pharmacology**
superoxide
singlet oxygen
n,n dimethyl 4 nitrosoaniline
aniline derivative

3 methoxysalicylic acid
unclassified drug
RN (riboflavin) 83-88-5; (doxorubicin) 23214-92-8, 25316-40-9; (histidine) 645-35-2, 7006-35-1, 71-00-1; (**urocanic acid**) **104-98-3**; (superoxide) 11062-77-4; (n,n dimethyl 4 nitrosoaniline) 138-89-6
CN (1) Adriamycin
CO (1) Pharmacia (United States); Sigma Aldrich (United States)

L83 ANSWER 4 OF 5 EMBASE COPYRIGHT 2003 ELSEVIER SCI. B.V.
AN **1999225821** EMBASE
TI **Urocanic acid** isomers are good hydroxyl radical scavengers: A comparative study with structural analogues and with uric acid.
AU Kammeyer A.; Eggelte T.A.; Bos J.D.; Teunissen M.B.M.
CS A. Kammeyer, Department of Dermatology, Academic Medical Centre, P.O. Box 22660, 1100 DD Amsterdam, Netherlands. a.kammeyer@amc.uva.nl
SO Biochimica et Biophysica Acta - General Subjects, (1999) 1428/1 (117-120). Refs: 21
ISSN: 0304-4165 CODEN: BBGSB3
PUI S 0304-4165(99)00063-X
CY Netherlands
DT Journal; (Short Survey)
FS 013 Dermatology and Venereology
037 Drug Literature Index
LA English
SL English
AB UV-exposure of the epidermis leads to the isomerisation of trans-UCA into cis-UCA as well as to the generation of hydroxyl radicals. This study shows by means of the deoxyribose degradation test that UCA isomers are more powerful hydroxyl radical scavengers than the other 4-(5-)substituted imidazole derivatives, such as histidine, though less powerful than uric acid. UCA, present in relatively high concentrations in the epidermis, may well be a major natural hydroxyl radical scavenger. Copyright (C) 1999 Elsevier Science B.V.
CT Medical Descriptors:
*antioxidant activity
in vitro study
scavenging system
short survey
priority journal
Drug Descriptors:
***urocanic acid: PD, pharmacology**
***urocanic acid: CM, drug comparison**
***urocanic acid: AN, drug analysis**
*imidazole derivative: PD, pharmacology
*imidazole derivative: CM, drug comparison
*imidazole derivative: AN, drug analysis
hydroxyl radical: TO, drug toxicity
uric acid: PD, pharmacology
uric acid: CM, drug comparison
uric acid: AN, drug analysis
histamine: PD, pharmacology
histamine: CM, drug comparison
histamine: AN, drug analysis
histidine: PD, pharmacology
histidine: CM, drug comparison
histidine: AN, drug analysis
deoxyribose
imidazole: PD, pharmacology
imidazole: CM, drug comparison
imidazole: AN, drug analysis
alanine: PD, pharmacology

alanine: CM, drug comparison
alanine: AN, drug analysis
furan derivative: PD, pharmacology
furan derivative: CM, drug comparison
furan derivative: AN, drug analysis
sunscreen: DV, drug development
2 furanacrylic acid: PD, pharmacology
2 furanacrylic acid: CM, drug comparison
2 furanacrylic acid: AN, drug analysis
RN (**urocanic acid**) **104-98-3**; (hydroxyl radical) 3352-57-6; (uric acid) 69-93-2; (histamine) 51-45-6, 56-92-8, 93443-21-1; (histidine) 645-35-2, 7006-35-1, 71-00-1; (deoxyribose) 533-67-5; (imidazole) 1467-16-9, 288-32-4; (alanine) 56-41-7, 6898-94-8; (2 furanacrylic acid) 539-47-9

L83 ANSWER 5 OF 5 EMBASE COPYRIGHT 2003 ELSEVIER SCI. B.V.
AN **1998303773** EMBASE
TI Epidermal **trans-urocanic acid** and the UV-A-induced photoaging of the skin.
AU Hanson K.M.; Simon J.D.
CS J.D. Simon, Department of Chemistry, Duke University, Durham, NC 27708, United States
SO Proceedings of the National Academy of Sciences of the United States of America, (1 Sep 1998) 95/18 (10576-10578).
Refs: 49
ISSN: 0027-8424 CODEN: PNASA6
CY United States
DT Journal; Article
FS 014 Radiology
LA English
SL English
AB The premature photoaging of the skin is mediated by the sensitization of reactive oxygen species after absorption of ultraviolet radiation by endogenous chromophores. Yet identification of UV-A-absorbing chromophores in the skin that quantitatively account for the action spectra of the physiological responses of photoaging has remained elusive. This paper reports that the in vitro action spectrum for singlet oxygen generation after excitation of **trans-urocanic acid** mimics the in vivo UV-A action spectrum for the photosagging of mouse skin. The data presented provide evidence suggesting that the UV-A excitation of **trans-urocanic acid** initiates chemical processes that result in the photoaging of skin.
CT Medical Descriptors:
*cutaneous parameters
*ultraviolet radiation
epidermis
chromatophore
light absorption
absorption spectrophotometry
photoreactivity
nonhuman
mouse
animal experiment
animal model
animal tissue
article
priority journal
Drug Descriptors:
***urocanic acid**
reactive oxygen metabolite
singlet oxygen
RN (**urocanic acid**) **104-98-3**

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=> fil wpix
FILE 'WPIX' ENTERED AT 17:16:07 ON 03 MAR 2003
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FILE LAST UPDATED:          3 MAR 2003      <20030303/UP>
MOST RECENT DERWENT UPDATE:     200315        <200315/DW>
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L95  ANSWER 1 OF 7  WPIX (C) 2003 THOMSON DERWENT
AN   2002-139762 [18]   WPIX
CR   2002-139764 [12]
DNC  C2002-043031
TI   Stable, well tolerated composition for topical drug administration to the
     eye, comprises solution of water-insoluble drug in a neutral oil,
     preferably medium chain triglyceride.
DC   B05 B07
IN   KLOECKER, N
PA   (AUDI-N) AUDIT INST MEDICAL SERVICES & QUALITY AS
CYC  96
PI   WO 2001097774 A2 20011227 (200218)* DE   12p    A61K009-00
        RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ
            NL OA PT SD SE SL SZ TR TZ UG ZW
         W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK
            DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR
            KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU
            SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
     DE 10030378   A1 20020314 (200226)              A61K047-44
     AU 2001083876 A  20020102 (200230)              A61K009-00
ADT  WO 2001097774 A2 WO 2001-EP7036 20010621; DE 10030378 A1 DE 2000-10030378
     20000621; AU 2001083876 A AU 2001-83876 20010621
FDT  AU 2001083876 A Based on WO 200197774
PRAI DE 2000-10030378 20000621
IC   ICM  A61K009-00; A61K047-44
     ICS  A61K031-565
```

AB WO 200197774 A UPAB: 20020513
NOVELTY - A composition (A) for topical application to the eye comprises one water-insoluble or sparingly water-soluble active agent (I) dissolved in a neutral oil (II).
ACTIVITY - Ophthalmological.
No biological data given.
MECHANISM OF ACTION - None given.
USE - For topical administration of drugs to the eye.
ADVANTAGE - (A) is well tolerated by the eye; adheres well to the eye surface to provide good resorption via the cornea or ocular mucosa; is stable; can be sterile filtered; requires no addition of (potentially allergenic) preservatives or emulsifiers; is easily administered in exact doses; and can be prepared rapidly and inexpensively.
Dwg.0/0
FS CPI
FA AB; DCN
MC CPI: B01-A02; B01-B02; B01-C05; B03-F; B03-H; B04-A01; B04-B01B; B04-B01C; B04-C01C; B04-N01A; B05-B01P; B06-A02; B06-D04; B06-D09; B07-B03; B07-D09; B10-A06; B10-B01B; B10-B02A; B10-B02E; B10-B03A; B10-C03; B10-E04; B10-J01; B12-M05; B12-M06; B14-N03; **B14-S08**

L95 ANSWER 2 OF 7 WPIX (C) 2003 THOMSON DERWENT
AN 2001-592607 [67] WPIX
DNC C2001-175848
TI Skin whitening agent, comprises sweet tea extract as active ingredient.
DC B04 D21
PA (KOSE-N) KOSE KK; (SUNR) SUNTORY LTD
CYC 1
PI JP 2001181173 A 20010703 (200167)* 11p A61K007-48
ADT JP 2001181173 A JP 1999-370804 19991227
PRAI JP 1999-370804 19991227
IC ICM A61K007-48
ICS A61K007-00; A61K035-78; A61P017-00
AB JP2001181173 A UPAB: 20011119
NOVELTY - A skin whitening agent comprises sweet tea extract as an active ingredient.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a skin whitening external preparation which contains sweet tea extract.
ACTIVITY - None given.
MECHANISM OF ACTION - Inhibits melanin formation. The melanin formation inhibition is evaluated using a culture medium inoculated with B16 melanoma cells of a mouse. The above culture medium was cultivated at 37 deg. C in 5% carbon dioxide concentration. Mulberry bark extract and sweet tea extract were added to the culture medium in a concentration of 1, 10 and 100 micro g/ml. A control was maintained without adding sample solution. The supernatant liquid was collected and visually observed for degree of whitening of B16 melanoma cultured cell. The result showed that the mulberry bark extract and sweet tea extract in 10 and 100 micro g/ml concentration had excellent skin whitening effect with 95% and 83% of live cells.
USE - As skin whitening agent.
ADVANTAGE - The skin whitening agent has excellent melanin formation inhibitory effect and pigmentation of skin. The agent effectively prevents blackening of skin by suntan, liver spots and freckles. The agent has superior skin whitening agent when compared to individual plant extracts.
Dwg.0/0
FS CPI
FA AB; DCN
MC CPI: B01-D02; B03-A; B03-E; B03-F; B03-H; B04-A08; B04-A09; B04-A10; B04-B01C1; B04-C01A; B04-C02; B04-L03; B05-A03A; B05-A03B; B06-A01; B06-A03; B06-D01; B06-D08; B07-D02; B07-D08; B07-D09; B10-A07; B10-A09B; B10-B02A; B10-B02D; B10-B02J; B10-C03; B10-C04A; B10-E02; B10-F02; B10-G02; B14-C03; **B14-N17**; B14-R05;

B14-S08; D08-B09A; **D08-B11**

TECH UPTX: 20011119

TECHNOLOGY FOCUS - PHARMACEUTICALS - Preferred Components: The skin whitening external preparation further contains skin whitening agent, activated oxygen **scavenger**, antioxidant, antiinflammatory agent and/or ultraviolet rays (UV) inhibitor. The skin whitening agent contained in the external preparation are extracts of liquorice, glabridin, glabrene, liquiritin, isoliquiritin, hydroquinone and/or its salt, cysteine and/or its derivative, ellagic acid and/or its derivative, vitamin C and/or its derivative, glutathione and/or its derivative, placenta, resorcinol and/or its derivative, ampelopsis radix, inulae flos, spatholobi caulis, mulberry bark, Angelica radix, Polygonum bistorta, Sophora flavescens, hawthorn, white lily, hop, Rosa multiflora, mica squid, acanthopanacis cortex, mokka, brown sugar, wheat embryo, Capillaris, coix seed, Aralia elata and/or cowberry. The activated oxygen **scavengers** are carotenoid such as superoxide dismutase, mannitol, beta carotene, astaxanthin, rutin and its derivative, bilirubin, cholesterol, tryptophan, histidine, quercetin, quercitrin, catechin and its derivative, gallic acid and its derivative, scutellaria root extract, ginkgo extract, saxifrage extract, melissa extract, Geranium thumbergii herb extract, moutan bark extract, parsley extract, tormentilla extract, momordicae fructus extract, sea weed extract and zikkopi extract. The antioxidant are vitamin A and its derivative or salts, vitamin B and its derivative, vitamin E and its derivative, dibutyl hydroxy toluene and/or butylated hydroxy anisole. The antiinflammatory agents are glycyrrhetic acid, mefenamic acid, phenylbutazone, indomethacin, ibuprofen, ketoprofen, allantoin, guai azulene and its derivatives, chondroitin sulfate and its salt, epsilon-aminocaproic acid, diclofenac sodium, extracts of Angelica keiskei, arnica, aloe, turmeric, Hypericum erectum, phellodendron bark, camomile, lonicerae flos, watercress, comfrey, Salvia, lithospermum root, perilla, white birch, tea, Calendula officinalis, sambucus, Typha latifolia, Sapindus mukorossi, mugwort and/or eucalyptus. The UV rays inhibitors are p-aminobenzoic acid, para amino ethyl benzoate, p-aminobenzoic acid glyceryl, N,N-dimethyl para amino amyl benzoate, N,N-dimethyl p-aminobenzoic acid-2-ethylhexyl, salicyclic acid-2-ethylhexyl, salicyclic acid ethylene glycol, salicyclic acid homomenthyl, 4-methoxy cinnamic acid-2-ethylhexyl, 4-methoxy cinnamic acid ethoxy ethyl, 4-methoxy cinnamic acid potassium, 4,5-diisopropyl cinnamic acid methyl, di-paramethoxy cinnamic acid mono-2-ethyl hexanoic acid glyceryl, 2-hydroxy-4-methoxy benzophenone, 2-hydroxy-4-methoxy benzophenone sulfonic acid, 2-hydroxy-4-methoxy benzophenone sodium sulfonate, 2,2'-dihydroxy-4,4'-dimethoxy benzophenone, 2,2'-dihydroxy-4,4'-dimethoxy benzophenone-5-sodium sulfonate, 2,4-dihydroxy benzophenone, 2,2'4,4'-tetra hydroxy benzophenone, 2-(2-hydroxy-5-methylphenyl)-benzotriazole, **urocanic acid**, **urocanic acid** ethyl, 4-t-butyl-4'-methoxy-dibenzoylmethane, titanium oxide, zinc oxide and iron oxide.

ABEX

EXAMPLE - 100 ml of 50 volume% ethanol was added to dried products of sweet tea and extracted at 3 days at room temperature. The obtained sweet tea extract contained 3% of dried solid content. A skin lotion was prepared by heat melting (in mass %) polyoxy ethylene (20 E.O) sorbitan monolauric acid ester (1.2), ethyl alcohol (8), preservative and fragrance. Sweet tea extract as obtained above (2), liquorice extract (0.5), ginkgo extract (0.01), glycerol (5) and 1,3-butylene glycol (6.5) were melted and added to purified water. The above solutions were mixed uniformly to form lotion.

L95 ANSWER 3 OF 7 WPIX (C) 2003 THOMSON DERWENT
AN 2001-159128 [16] WPIX
DNC C2001-047175
TI **Urocanic acid** and allied compounds as radical

scavengers, for treatment of oxidative stress, and as immunomodulators, use in skin disorders, e.g., psoriasis, dermatitis, and contact hypersensitivity.

DC B03 D13 D21
IN KAMMEIJER, A
PA (UYAM-N) UNIV AMSTERDAM ACAD ZIEKENHUIS BIJ VAN
CYC 95
PI WO 2001000145 A1 20010104 (200116)* EN 44p A61K007-00
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2000057163 A 20010131 (200124) A61K007-00
EP 1196129 A1 20020417 (200233) EN A61K007-00
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
JP 2003506566 W 20030218 (200315) 41p C09K015-30
ADT WO 2001000145 A1 WO 2000-NL439 20000623; AU 2000057163 A AU 2000-57163 20000623; EP 1196129 A1 EP 2000-942559 20000623, WO 2000-NL439 20000623; JP 2003506566 W WO 2000-NL439 20000623, JP 2001-515896 20000623
FDT AU 2000057163 A Based on WO 200100145; EP 1196129 A1 Based on WO 200100145; JP 2003506566 W Based on WO 200100145
PRAI EP 1999-202066 19990625
IC ICM A61K007-00; C09K015-30
ICS A23L001-30; A61K007-40; A61K007-42; A61K007-48; A61K031-415; A61K031-4164; A61P009-10; A61P017-00; A61P017-06; A61P017-16; A61P025-18; A61P037-02; A61P039-06
AB WO 200100145 A UPAB: 20010323
NOVELTY - Method of **scavenging** radicals in a substance, by providing **urocanic acid** (UCA) or its functional equivalents.

ACTIVITY - Antioxidant; immunomodulatory; dermatological.

Tests to determine the inhibitory effects of the UCA oxidation products were performed. Maximum ear swelling response was normalized to 100 %, the largest reduction was obtained with the residue of severely photooxidized UCA (PO mix III), containing less than 4 % residual cis-UCA. It resulted in 81 % reduction in ear swelling. A tenfold dilution (0.2 g/l) gave 71 % reduction which is similar to the effect of cis-UCA at 1 g/l (69 % reduction). An additional, synergistic effect is noted when mixing three imidazoles.

MECHANISM OF ACTION - The UCA or equivalent removes hydroxyl radicals generated by e.g. UV irradiation, which cause oxidative stress reactions. Cis-UCA although an efficient **scavenger**, has more immunosuppressive activity which may not be desired.

USE - The UCA or equivalent is of use in treatment of various skin diseases including psoriasis, dermatitis, contact dermatitis, as an antioxidant in food and in cosmetic products.

ADVANTAGE - UCA and several of its analogs are water soluble, unlike many antioxidants.

Dwg.0/5

FS CPI
FA AB; DCN
MC CPI: B07-D09; **B14-G03; B14-N17; B14-R01; B14-S08; D03-H01T2; D08-B11**
TECH UPTX: 20010323
TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Product: The **scavenger** is trans-UCA, or an oxidation product, imidazole-4-carboxaldehyde (ImCHO), imidazole-4-acetic acid (ImAc), or imidazole-4-carboxylic acid (ImCOOH).
ABEX
EXAMPLE - The effect of UCA and various analogs, including photo-oxidized

(PO) on contact hypersensitivity as a reduction of ear swelling in mice is shown in the figure. The Im-mix is a mixture of ImCHO, ImAc, and ImCOOH from photooxidation.

L95 ANSWER 4 OF 7 WPIX (C) 2003 THOMSON DERWENT
AN 2001-041263 [05] WPIX
CR 2001-072114 [03]
DNC C2001-012028
TI Composition for intranasal administration of water-insoluble drugs, e.g. scopolamine, budesonide or diazepam, comprising a solution of the water-insoluble or sparingly water-soluble drug in a neutral oil e.g. a triglyceride.
DC A96 B01 B02 B04 B05 B07
IN KLOECKER, N
PA (HEXA-N) HEXAL AG; (KLOE-I) KLOECKER N
CYC 92
PI WO 2000074651 A1 20001214 (200105)* DE 19p A61K009-12
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
DE 19936543 A1 20010208 (200109) A61K031-46
AU 2000053973 A 20001228 (200119) A61K009-12
EP 1185246 A1 20020313 (200225) DE A61K009-12
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
ADT WO 2000074651 A1 WO 2000-EP4799 20000526; DE 19936543 A1 DE 1999-19936543 19990803; AU 2000053973 A AU 2000-53973 20000526; EP 1185246 A1 EP 2000-938686 20000526, WO 2000-EP4799 20000526
FDT AU 2000053973 A Based on WO 200074651; EP 1185246 A1 Based on WO 200074651
PRAI DE 1999-19936543 19990803; DE 1999-19925290 19990602
IC ICM A61K009-12; A61K031-46
ICS A61K031-58; A61K047-44
AB WO 200074651 A UPAB: 20020418
NOVELTY - A pharmaceutical composition (A) for intranasal administration comprises a solution of at least one water-insoluble or sparingly water-soluble active agent (I) in neutral oil (II).
USE - For the intranasal administration of water-insoluble or sparingly water-soluble drugs. (A) is applied to the nasal mucosa for the administration of a wide range of (I), e.g. beclomethasone dipropionate, scopolamine, budesonide, diazepam or omeprazole.
ADVANTAGE - (II) adheres well to the nasal mucosa, spreads the cells and provides very good resorption of (I), with no pH dependency problems. The solutions of (I) are readily filtered (allowing easy sterilization by filtration), well tolerated/non-irritating (allowing good patient compliance), highly stable and do not support the growth of human-pathogenic microorganisms. An exact dose is delivered. The use of (environmentally harmful) propellants and (potentially allergenic) preservatives is avoided.
Dwg.0/0
FS CPI
FA AB; DCN
MC CPI: A12-V01; B01-B02; B04-A01; B06-D05; B06-D07; B10-A05; B10-G02; B12-M01B; B12-M07; B12-M09; B14-C01; B14-C06; B14-D01; B14-D02A; B14-D03; B14-E05; B14-F02B; B14-J01A3; B14-J01B4; B14-J02B1; B14-J02C; B14-J02D; B14-L06; B14-L11; B14-M01; **B14-S08**
TECH UPTX: 20010124
TECHNOLOGY FOCUS - PHARMACEUTICALS - Preferred Active Agents: (I) is selected from corticoids, androgens, estrogens, gestagens, proton pump inhibitors, 5-HT1 antagonists, sympatholytic/sympathomimetic agents, anticholinergics, tranquilizers/anxiolytics, antiaddictive agents,

analgesics, calcium antagonists, antiemetics, hypophyseal/hypothalamus hormones, antiparkinsonian agents, antihistamines, angiotensin II antagonists and/or nitroglycerin. (I) is especially beclomethasone dipropionate, scopolamine base, budesonide base, diazepam and/or omeprazole.
Preferred Oils: (II) is a medium-chain triglyceride, especially an ester obtained from caproic, capric, caprylic, lauric, myristic, linoleic and/or succinic acid (especially capric, linoleic and/or succinic acid) and glycerol or propylene glycol. (II) has a viscosity of 1-40 (preferably 5-20, especially 8-15) mPa.s.
Preferred Composition: (A) contains (I) at 0.01-15 (preferably 0.08-5, especially 0.1, 0.2, 0.5 or 1) wt. %. (A) further contains at least one antioxidant, specifically selected from alpha-tocopherol (or its ester), ascorbic acid (or its ester), beta-carotene, cysteine, acetylcysteine, folic acid, phytic acid, cis- and/or **trans-urocanic acid**, carnosine, histidine, flavones, flavonoids, lycopene, tyrosine, glutathione (or its ester), alpha-lipoic acid, ubiquinone, nordihydroguiaretic acid, gallic acid esters, phosphoric acid derivatives, butyl hydroxytoluene, butyl hydroxyanisole, tetraoxydimethyl-biphenyl, polyols, citric or tartaric acid, disodium or disodium-calcium edetate, coniferyl benzoate and/or their derivatives. (A) optionally contains one or more of solubilizers, resorption promoters and/or detergents.

ABEX

ADMINISTRATION - (A) is applied to the nasal mucosa using e.g. a pump spray or valve spray, or as nose drops.

EXAMPLE - A solution of scopolamine (Ia) (69.2 mg) in 100 ml Miglyol 840 (RTM; medium chain triglyceride) was sterile-filtered and filled into a pump spray having a dose volume of 50 microl (corresponding to 36.4 microg of (Ia)) or 100 microl (69.2 microg of (Ia)). These doses were suitable for pediatric use.

L95 ANSWER 5 OF 7 WPIX (C) 2003 THOMSON DERWENT
AN 2000-631402 [61] WPIX
DNC C2000-189965
TI Cosmetic formulation for enhancing fairness of skin, contains tomato pulp.
DC B04 D21
PA (KOSE-N) KOSE KK; (NIDM-N) NIPPON DEL MONTE KK
CYC 1
PI JP 2000229828 A 20000822 (200061)* 14p A61K007-42
ADT JP 2000229828 A JP 1999-28302 19990205
PRAI JP 1999-28302 19990205
IC ICM A61K007-42
ICS A61K007-00; A61K035-78; A61P017-00
AB JP2000229828 A UPAB: 20001128
NOVELTY - A cosmetic formulation for whitening skin contains tomato juice/pulp.
ACTIVITY - Dermatological. Skin whitening effect - Skin whitening effect of skin cream containing the tomato extract was tested on 15 females aged 28-55 years. The cream was applied to the face for 12 weeks twice (morning and night) every day. It was found that dullness of skin was prevented and skin became clear for all members of the group.
MECHANISM OF ACTION - Tyrosinase inhibitor; melamine formation inhibitor. To a sample containing 100 ml ethyl alcohol (50% in water(v/v)), 10 g each of mulberry bark and sophora flavescens were mixed and kept for 3 days at room temperature so as to obtain the extract mixture containing 2.8% mulberry bark extract and 1.8% sophorae radix extract. Filtered clear tomato liquid was mixed with the obtained extract and a solution containing 10 mg tyrosinase in phosphoric acid buffer was added to it. Further 0.1 M phosphoric acid buffer (pH6.8) was added and the solution was incubated for 10 minutes at 25 deg. C. A substrate solution containing L-DOPA (198 mg) in 100 ml phosphoric acid buffer was added and made to react for 10 minutes. The absorbence (ODS) in 475 nm was

measured after the reaction. Again the absorbence (ODHE) after heat deactivation and absorbence (ODB) without sample addition, was also measured similarly using the enzyme. The activity inhibition rate of tyrosinase was computed according to the relation (ODB-(ODS-ODHE)/ODB) asterisk 100 and it was found to be very high for the sample containing the tomato extract than when the skin whitening agents were present alone.

USE - As skin whitening cosmetic (claimed), for reducing and blocking sun tan and pigmentation. The cosmetic formulation can be used as skin cream, lotion, pack and also as ingredient in foundations, eye shadow, mascara, lip stick and ointments.

ADVANTAGE - The formulation whitens skin effectively by preventing pigmentation and formations of spots and freckles. The formulation has wide medical and cosmetic benefits.

Dwg.0/0

FS CPI

FA AB; DCN

MC CPI: B04-A08C2; B04-A10G; **B14-N17**; **B14-R01**; D08-B09A

TECH UPTX: 20001128

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Composition: The formulation also contains a skin whitener, an active oxygen **scavenger**, an antioxidant, an antiinflammatory agent and/or an ultraviolet ray inhibitor. The skin whitener is chosen from glabridin, glabrene, liquiritin, isoliquiritin, hydroquinone or its derivative, cysteine or its derivative, vitamin C, glutathione and/or its derivative. The active oxygen **scavenger** is chosen from superoxide dismutase (SOD), mannitol, carotenoid, astaxanthin, rutin, bilirubin, cholesterol, tryptophan, histidine, quercetin, quercitrin, catechin, gallic acid and/or their derivatives. The antioxidant is chosen from vitamins A, B, D, E, their derivatives, dibutyl hydroxy toluene and/or butylated hydroxy anisole. The antiinflammatory agent is glycyrrhetic acid and its derivative, mefenamic acid, phenylbutazon, indomethacin, ibuprofen, ketoprofen, allantoin, chondroitin sulfate, epsilon-aminocaproic acid, diclofenac sodium, and/or tranexamic acid or their derivatives. The UV ray inhibitor is chosen from about 30 compounds such as p-aminobenzoic acid (PABA), PABA ethyl, PABA glyceryl, N,N-dimethyl PABA amyl, **urocanic acid**, **urocanic acid** ethyl, 4-t-butyl-4'-methoxy-dibenzoylmethane, titanium oxide, zinc oxide, iron oxide, cerium oxide and/or zirconium oxide. The content of tomato juice in the formulation is 0.00005-5 weight percent (wt.%) on a solid basis. The formulation contains preferably 0.001-5 wt.% skin whitener, 0.001-3 wt.% active O2 **scavenger**, 0.001-3 wt.% antioxidant, 0.001-3 wt.% antiinflammatory agent and 0.1-20 wt.% UV ray inhibitor.

TECHNOLOGY FOCUS - BIOLOGY - Preferred Fruit: The juice is taken from tomato especially Lycopersicum esculentum. Also the skin whitener is chosen from placenta extract, liquorice extract, mulberry bark extract, angelica radix extract, hawthorn extract and/or extract from white lily, polygonum bistorta, sophora flavescens, rosae multiflorae fructus, mica squid, acanthopanacis cortex, mokka, brown sugar or coix seed. Further the oxygen **scavenger** is also chosen from extracts of scutellaria root, ginkgo, saxifrage, melissa, geranium thumbergii, moutan bark, parsley, tormentilla, momordicae fructus, zikkopi, rosemary, peony, grape seed, stevia and/or yeast. Also the antiinflammatory agent is extracts from angelica keiskei, arnica, aloe, turmeric, hypericum erectum, philodendron bark, chamomile, lonicerae flos, watercress, comfrey, salvia and/or mugwort.

ABEX

ADMINISTRATION - None given.

EXAMPLE - A milky lotion containing polyoxy ethylene (10 E.O) sorbitan monostearate (1%), polyoxy ethylene (60 E.O) sorbitol tetraoleate (0.5%), glyceryl monostearate (1%), behenyl alcohol (0.5%) stearic acid (0.5%), squalane (8%), 4-methoxy cinnamic acid-2-ethylhexyl (2%), tomato juice (5%), glycyrrhetic acid dipotassium (0.1%), carboxy vinyl polymer (0.1%),

sodium hydroxide (0.05%), ethyl alcohol (5%), and suitable antiseptic, fragrance agents and water was prepared. The lotion was found to prevent occurrence of dull skin, pigmentation and presence of spots and improve texture of skin on continuous use.

L95 ANSWER 6 OF 7 WPIX (C) 2003 THOMSON DERWENT
AN 2000-631401 [61] WPIX
DNC C2000-189964
TI Skin external preparation for preventing aging contains tomato pigment as active ingredient.
DC B04 D21
PA (KOSE-N) KOSE KK; (NIDM-N) NIPPON DEL MONTE KK
CYC 1
PI JP 2000229827 A 20000822 (200061)* 12p A61K007-42
ADT JP 2000229827 A JP 1999-28301 19990205
PRAI JP 1999-28301 19990205
IC ICM A61K007-42
ICS A61K007-00; A61K009-06; A61K035-78; A61P017-00
AB JP2000229827 A UPAB: 20001128
NOVELTY - Skin external preparation comprises tomato pigment as an active ingredient.
USE - As skin cosmetics for preventing aging (claimed).
ADVANTAGE - The skin external preparation prevents inflammation of skin due to peroxylipid formation and also blackening, wrinkles and sagging and has excellent skin aging prevention effect. The skin external preparation is widely used in medical and cosmetic treatment.
Dwg.0/0
FS CPI
FA AB; DCN
MC CPI: B03-A; **B14-N17**; **B14-R01**; D08-B09A
TECH UPTX: 20001128
TECHNOLOGY FOCUS - PHARMACEUTICALS - Preferred Composition: The tomato pigment containing lycopene composite is obtained by centrifugation of processed tomato material and collecting the liquid portion by filtration. Preferred Components: The skin external preparation further comprises medicinal components of active oxygen **scavenger**, antioxidant, antiinflammatory agent, ultraviolet (UV) ray inhibitor, cell activator and/or moisturizer. Preferred **Scavenger**: The active oxygen **scavengers** are superoxide dismutase (SOD), mannitol, carotenoid, astaxanthin, rutin and its derivative, bilirubin, cholesterol, tryptophan, histidine, quercetin, quercitrin, catechin and its derivative, gallic acid and its derivative, glutathione and its derivative, extracts of scutellaria root, ginkgo, spatholobi caulis hawthorn, mica squid, saxifrage, melissa, geranium thumbergii, moutan bark, pursky tormentilla, momordicae fructus zikkopi, stevia and/or rosae multiflorae fructus. Preferred Antioxidant: The antioxidants are vitamins A, B, C, D, E and their derivatives, dibutyl hydroxy toluene and/or butylated hydroxyanisole. Preferred Antiinflammatory Agent: The antiinflammatory agents are glycyrrhetic acid, mefenamic acid, phenyl butazon, indomethacin, ibuprofen, ketoprofen, allantoin, guai azulene and their derivatives, epsilon-aminocaptoic acid, diclofenac sodium and/or tranexamic acid and its derivative, extracts of Angelica keiski, milk vetch, arnica, Polygonum bistorta, turmeric, Hypericum erectum phellodendron bark chamomile liquorice, lonicerae flos, water cress, comfrey, acanthopanacis, salvia, lithospermum root, perilla, white birch, tea, Calendula officinalis, sambucus, Sapindus mukorossi, mugwort and eucalyptus. Preferred UV Inhibitors: The ultraviolet ray inhibitors are paraamino benzoic acid (PABA), PABA ethyl, PABA glyceryl, N,N-dimethyl PABA amyl, N,N-dimethyl PABA-2-ethylhexyl, salicylic acid-2-ethylhexyl, salicylic acid ethylene glycol, salicylic acid homomenthyl, 4-methoxy cinnamic acid-2-ethylhexyl, 4-methoxy cinnamic acid ethoxy ethyl, 4-methoxy cinnamic acid potassium, 4-5-diisopropyl cinnamic acid methyl, diparamethoxy cinnamic acid mono 2-ethyl hexanoic acid glyceryl,

2-hydroxy-4-methoxy benzophenone, 2-hydroxy-4-methoxy benzophenone sulfonic acid, 2-hydroxy-4-methoxy benzophenone sodium sulfonate, 2,2'-dihydroxy-4,4'-dimethoxy benzophenone, 2,2'-dihydroxy-4,4'-dimethoxy benzophenone-5-sodium sulfonate, 2,4 dihydroxy benzophenone, 2,2',4,4'-tetra hydroxy benzophenone, 2-(2-hydroxy-5-methyl phenyl)-benzotriazol, **urocanic acid**, **urocanic acid** ethyl, 4-t-butyl-4'-methoxy-dibenzoyl methane, titanium oxide, zinc oxide, iron oxide, cerium oxide and zirconium oxide. Preferred Cell Activators: The cell activators contains nucleic acids and organic acids. The nucleic acid is adenylic acid derivative such as deoxyribonucleic acid and its derivatives, adenosine monophosphate (AMP), adenosine diphosphate (ADP), adnonsine triphosphate (ATP), ribonucleic acid and its derivative, cyclic AMP, cyclic guanosine monophosphate, flavin adenine nucleotide, guanine, adenine, cytosine, thymine, xanthin and their derivatives, theophylline, caffeine, alpha and gamma-linolenic acid, eicosupentoenoic acid and their derivatives, estradiol and ethenyl estradiol. The organic acid is glycolic acid, citric acid, lactic acid, malic acid, tartaric acid or succinic acid, salicylic acid and their derivative. The preparation also contains hinokitiol and/or cepharanthine. The cell activators contains animal extract of placenta, calf blood, blood serum deproteinization and spleen, egg component, cockscomb, shellfish shell, shellfish meat, royal jelly, silk professional tin, its decomposition product and their derivatives haemoglobin and its decomposition product, lactoferrin and its decomposition product and sepia, yeast, lactic acid bacteria, bifidobacterium, extract derived from microorganisum. The plant extracts as a cell activator are asparagus, carrot, shiitake mushroom, soybean, swertia, jujube, rosemary, garlic, red pepper, bud, barley, grape seed oil, rice fermentation, lettuce, avocado, reishi mushroom and plant worm. Preferred Moisturizer: The moisturizer are mucopolysaccharide, amino acids, saccharides, mucin, D-panthenol and its derivative, urea, phospholipid, glycolipid and/or ceramide. Mucopolysaccharide is hyaluronic acid, chondroitin sulfuric acid, dermatan sulfate, heparan sulfate, heparin or keratan sulfuric acid and their derivatives, collagen, elastin, fibronectin or keratin and its hydrolyzed substance. The amino acids are glycine, alanine, valine, isoleucine, serine, threonine, aspartic acid, glutamic acid, asparagine, glutamine, lysine, hydroxy lysine, arginine, cystine, methionine, phenylalanine, tyrosine, proline, hydroxyproline, theanine, ornithine, cirulline, pyrrolidone carboxylic acid and their derivatives. The saccharides are sorbitol, erythritol, maltose, maltitol, xylitol, xylose, trehalose, inositol, glucose, pentaerythritol, fructose, cane sugar, and its ester and/or dextrin. The plant extracts are honey, extracts of brown sugar, aloe, sea weed, quince, hamamelis, loofah, Malva sylvestris, apple, grape, prune, lime, citron, linden, raspberry, Sophora flavcescens, mokka, wheat germ, Capillaris, white lily, hop, peppermint, Hottuynia cordata, peony, coix seed, lavender, avena butcher's-broom, althea, hoelen, urtica, fennel, kiwi, cucumber, grape, cactus, rehmannia root, horsetail Equisetum arvense, cnidium rhizome, mulberry bark, Thymus vulgaris, horse chestnut, peach, rose, apricot, maize, ginger, lemon, orange, strawberry, Gentiana, Althaea officinalis, asiasarum root, burdock, Certonia siliqua, Hedera rhombea, pine, Rodgersia podophylla, Sanguisorba officinalis, Ononis. Preferred Composition: The skin external preparation contains 0.0005-5 weight percent of tomato pigment.

ABEX

ADMINISTRATION - The skin external preparation contains 0.005-5 weight% of tomato pigment, preferably 0.001-2 weight% and formulated as lotion, cream, ointment etc.

EXAMPLE - The cosmetic was prepared by mixing (%) glycerol (5.0), 1,3-butylene glycol (6.5), polyoxyethylene sorbitan (1.2), ethyl alcohol (5), 2-hydroxy-4-methoxy benzophenone-5-sulfuric acid (1), tomato pigment (0.001), antiseptic, fragrance and purified water.

L95 ANSWER 7 OF 7 WPIX (C) 2003 THOMSON DERWENT
AN 1999-582467 [50] WPIX
DNC C1999-169545
TI Dispersants or solvents for ultraviolet filters and ultraviolet-absorbing pigments in sunscreen compositions.
DC B07 D21 E19
IN ANSMANN, A; GONDEK, H; KAWA, R; TESMANN, H
PA (HENK) HENKEL KGAA
CYC 25
PI EP 950398 A2 19991020 (199950)* DE 10p A61K007-42
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
DE 19817045 A1 19991021 (199950) A61K007-42
ADT EP 950398 A2 EP 1999-106916 19990408; DE 19817045 A1 DE 1998-19817045 19980417
PRAI DE 1998-19817045 19980417
IC ICM A61K007-42
ICS B01F017-34
AB EP 950398 A UPAB: 19991201
NOVELTY - Polycarboxylic acid esters are used as dispersants or solvents for ultraviolet filters and ultraviolet-absorbing pigments in the production of sunscreen compositions.
ACTIVITY - None given.
MECHANISM OF ACTION - None given.
USE - For solubilizing photoprotective factors in oil-based sunscreen compositions and enhancing their ultraviolet absorption.
ADVANTAGE - The esters serve not only as dispersants or solvents but also synergistically enhance the ultraviolet absorption of the ultraviolet filters and pigments.
Dwg.0/0
FS CPI
FA AB; DCN
MC CPI: B10-G02; **D08-B11**; E06-D05; E07-D13; E10-A09B; E10-C04; E10-F02; E10-G02
TECH UPTX: 19991201
TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - The esters are preferably used in amounts of 10-90 wt.% in compositions containing 0.1-25 wt.% ultraviolet filters and/or ultraviolet-absorbing pigments and optionally antioxidants.
Preferred Esters: These are derived from dicarboxylic acids of formula (I): HOOC-A-COOH (I)
A = 2-10C aliphatic or aromatic hydrocarbylene.
The esters are preferably mono and/or diesters of succinic, maleic, itaconic, adipic or dodecanedioic acid with primary alcohols containing 4-18 carbon atoms, especially di-n-butyl adipate. Preferred Ultraviolet Filters: These are selected from 3-benzylidene-camphor, 3-benzylidene-norcamphor and their derivatives, 4-aminobenzoic acid derivatives, cinnamic acid esters, salicylic acid esters, benzalmalonic acid esters, benzophenone derivatives, benzoylmethane derivatives, triazine derivatives, propan-1,3-diones, ketotricyclo(5.2.1.0)decane derivatives, 2-phenylbenzimidazole-5 sulfonic acid and its salts and sulfonic acid derivatives of benzophenone or 3-benzylidenecamphor.
Preferred Antioxidants: These are selected from amino acids and their derivatives, imidazoles (e.g. **urocanic acid**) and their derivatives, peptides and their derivatives, carotinoids, carotenes and their derivatives, chlorogenic acids and their derivatives, lipoic acid and its derivatives, aurothioglucose, propylthiouracil and other thiols and their salts, dilauryl thiodipropionate, distearyl thiodipropionate, thiodipropionic acid and their derivatives, sulfoximine compounds, metal chelatoren, alpha-hydroxy acids, humic acid, bile acids, bile extracts, bilirubin, biliverdin, EDTA, EGTA and their derivatives, unsaturated fatty acids and their derivatives, folic acid and its derivatives, ubiquinone, ubiquinol and their derivatives, vitamin C and its derivatives, tocopherols and their derivatives, vitamin A and its derivatives,

coniferyl benzoate, rutic acid and its derivatives, alpha-glycosylrutin, ferulic acid, furfurylideneglucitol, camosin, butyl hydroxytoluol, butyl hydroxyanisole, nordihydroguaiaretic acid, trihydroxybutyrophenone, uric acid and its derivatives, mannose and its derivatives, superoxide dismutase, zinc and its derivatives, selenium and its derivatives, and stilbenes and their derivatives.

TECHNOLOGY FOCUS - INORGANIC CHEMISTRY - Preferred Pigments: These are selected from titanium dioxide, zinc oxide, iron oxide, aluminum oxide, cerium oxide, zirconium oxide, silicates, barium sulfate and zinc stearate.

=> d his

(FILE 'HOME' ENTERED AT 16:07:14 ON 03 MAR 2003)
SET COST OFF

FILE 'REGISTRY' ENTERED AT 16:07:30 ON 03 MAR 2003
E UROCANIC ACID/CN
L1 1 S E3
E TRANS-UROCANIC ACID/CN
L2 1 S E3
L3 21 S C6H6N2O2/MF AND NCNC2/ES AND 2 PROPENOIC
L4 15 S L3 AND 3 AND 4
L5 3 S L4 NOT (D/ELS OR RADICAL OR 14C OR D/ELS OR T/ELS)
L6 3 S L1,L2,L5
E IMIDAZOLE-4-CARBOXYLIC ACID/CN
L7 1 S E3
E IMIDAZOLE-4-ACETIC ACID/CN
L8 1 S E3
E IMIDAZOLE-4-CARBOXYALDEHYDE/CN
E IMIDAZOLE-4-CARBOXALDEHYDE/CN
L9 1 S E3

FILE 'HCAPLUS' ENTERED AT 16:11:36 ON 03 MAR 2003
L10 719 S L6
L11 1011 S (UROCANIC OR TRANS UROCANIC OR UROCANINIC OR 5 IMIDAZOLEACRYL

FILE 'REGISTRY' ENTERED AT 16:12:23 ON 03 MAR 2003
SEL CHEM L6

FILE 'HCAPLUS' ENTERED AT 16:12:28 ON 03 MAR 2003
L12 1156 S E1-E16
L13 437 S L12 NOT L10
L14 3 S L13 NOT L11
L15 1153 S L10,L11
L16 1153 S L12 AND L15
E SCAVENG/CT
L17 868 S E6-E10
E E11+ALL
L18 4121 S E2+NT
E SCAVENG/CT
E E6+ALL
L19 1248 S E4,E5,E3+NT
E RADICAL/CT
E E76+ALL
L20 3207 S E4+NT
E E6+ALL
L21 26427 S E1
L22 106500 S E1+NT
E ANTIOXIDANT/CT
E E12,E15,E16,E20,E22,E23,E24,E25,E26,E27

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                E E11+ALL
                E ANTIOXIDANT/CT
L23         6531 S E12,E15,E16,E20,E22,E23,E24,E25,E26,E27
                E E11+ALL
L24        48419 S E5+NT
                E E12+ALL
L25       215095 S E4,E3+NT
L26       351218 S E2+NT
                E OXIDATIVE STRESS/CT
L27        19035 S E3,E5
                E E5+ALL
                E IMMUNE RESPONSE/CT
                E E3+ALL
L28        33025 S E2
                E PHOTOOXIDATION/CT
                E E3+ALL
L29         9213 S E2
                E E2+ALL
L30         9525 S E4+NT
L31           61 S L16 AND L17-L30
L32          747 S L7-L9
L33          471 S IMIDAZOLE 4 ()(CARBOXYLIC ACID OR ACETIC ACID OR CARBOXALDEHY
L34          221 S 4()(IMIDAZOLECARBOXALDEHYDE OR IMIDAZOLECARBOXYLIC ACID OR IM
L35           15 S 4()IMIDAZOLE()(CARBOXALDEHYDE OR CARBOXYLIC ACID OR ACETIC AC
L36           80 S 4()(FORMYLIMIDAZOLE OR FORMYL IMIDAZOLE)
L37          382 S IMIDAZOLEACETIC ACID
L38           86 S L16 AND L32-L37
L39            5 S L31 AND L38
L40            3 S L39 AND SCAVENG?
L41            7 S L31,L38 AND SCAVENG?
L42            7 S L40,L41
L43          100 S L10 (L) (THU OR COS OR FFD OR BAC OR PAC OR PKT)/RL
L44          100 S L43 AND L16
L45          254 S L6 AND (COSMETIC? OR PHARMACEUT? OR PHARMACOL? OR FOOD? OR FE
                E COSMETICS/CT
                E E3+ALL
L46          117 S L6 AND (E30+NT OR E1+NT OR E2)
L47           86 S L6 AND (DRUG# OR PHARMACEUT? OR COSMETIC?)/CW
                E FOOD/CT
L48            2 S L6 AND (FOOD? OR FEED?)/CW
L49            4 S L43-L48 AND SCAVENG?
L50           62 S L43-L48 AND L31,L38
L51            7 S L42,L49
L52            4 S L50 AND L51
L53            7 S L51,L52
L54           58 S L50 NOT L53
                SEL DN AN 13 38 41 42
L55            4 S L54 AND E1-E12
L56           11 S L53,L55
                E KAMMEIJER A/AU
L57            4 S E3,E4
L58            1 S L57 AND L10-L56
                E IMMUNOMODULATOR/CT
                E E4+ALL
L59           22 S L16 AND E4+NT
                E E13+ALL
L60            0 S L16 AND E4,E3+NT
L61           13 S L59 AND L31,L38,L43-L47,L50
                SEL DN AN 4 12 7
L62            3 S E1-E9
L63           13 S L56,L58,L62 AND L10-L62

FILE 'HCAPLUS' ENTERED AT 16:41:33 ON 03 MAR 2003
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     FILE 'REGISTRY' ENTERED AT 16:42:02 ON 03 MAR 2003

     FILE 'MEDLINE' ENTERED AT 16:42:25 ON 03 MAR 2003
L64         270 S L6
L65         407 S L11
L66         407 S L12
L67         407 S L64-L66
                E SCAVENG/CT
                E E9+ALL
                E E2+ALL
L68           7 S L67 AND E6+NT
                E OXIDATION/CT
                E E5+ALL
L69           7 S E9+NT AND L67
                E E16+ALL
L70           5 S E7+NT AND L67
                E E57+ALL
L71           0 S E4+NT AND L67
                E PHOTOOXIDATION/CT
                E PHOTO-OXIDATION/CT
                E PHOTO OXIDATION/CT
                E PHOTOXIDATION/CT
L72          16 S L68-L70
                E PHOTOSENSITIZING AGENTS/CT
L73           5 S L67 AND E3+NT
                E SUPEROXIDE/CT
L74           3 S E46+NT AND L67
L75          20 S L72-L74
                SEL DN AN 1 5
L76           2 S L75 AND E1-E6
                E KAMMEIJER A/AU
                E KAMMEYER A/AU
L77           5 S E3 AND L67
L78           5 S L76,L77 AND L64-L77

     FILE 'MEDLINE' ENTERED AT 16:49:20 ON 03 MAR 2003

     FILE 'EMBASE' ENTERED AT 16:57:44 ON 03 MAR 2003
L79         362 S L67
                E SCAVENG/CT
L80           1 S L79 AND E5+NT
                E E72+ALL
                E SUPEROXIDE/CT
L81           2 S E3+NT AND L79
                E RADICAL/CT
                E E3+ALL
L82           7 S L79 AND E4+NT
                SEL DN AN 3-7
L83           5 S L82 AND E1-E5
L84           1 S L80,L81 NOT L82

     FILE 'EMBASE' ENTERED AT 17:02:19 ON 03 MAR 2003

     FILE 'WPIX' ENTERED AT 17:02:28 ON 03 MAR 2003
L85         142 S L11/BIX
                E UROCANIC ACID/DCN
                E E3+ALL
L86          53 S E2
                E TRANS UROCANIC ACID/DCN
                E TRANS-UROCANIC ACID/DCN
L87         164 S L85,L86
L88           4 S L87 AND SCAVENG?/BIX
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L89          79 S L87 AND (Q624 OR Q623 OR Q620 OR P943 OR P433 OR P434)/M0,M1,
L90          31 S L87 AND (B14-G03 OR C14-G03 OR B12-D02B OR C12-D02B OR B14-N1
L91           4 S L88 AND L89,L90
L92           5 S L87 AND (D08-B11 OR B14-S08 OR C14-S08)/MC
L93          46 S L87 AND (Q620 OR Q623 OR Q624)/M0,M1,M2,M3,M4,M5,M6
L94           5 S L93 AND L91,L92
L95           7 S L88,L91,L92,L94

     FILE 'WPIX' ENTERED AT 17:16:07 ON 03 MAR 2003
L96          60 S L33/BIX OR L34/BIX OR L35/BIX OR L36/BIX OR L37/BIX
L97           3 S L87 AND L96
L98           2 S L97 NOT L95
```
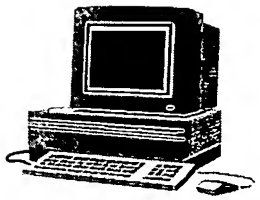

BioTech-Chem Library
Search Results
Feedback Form (Optional)



Scientific & Technical Information Center

The search results generated for your recent request are attached. If you have any questions or comments (compliments or complaints) about the scope or the results of the search, please contact ***the BioTech-Chem searcher*** who conducted the search ***or contact***:

Mary Hale, Supervisor, 308-4258
CM-1 Room 1E01

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* *(Example: 1610)*
- *Relevant prior art **found**, search results used as follows:*
  - ☐ 102 rejection
  - ☐ 103 rejection
  - ☐ Cited as being of interest.
  - ☐ Helped examiner better understand the invention.
  - ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
  (journal articles, conference proceedings, new product announcements etc.)

- *Relevant prior art **not found**:*
  - ☐ Results verified the lack of relevant prior art (helped determine patentability).
  - ☐ Search results were not useful in determining patentability or understanding the invention.

Other Comments:

Drop off completed forms at the **Circulation Desk CM-1**, or send to Mary Hale, **CM1-1E01 or e-mail mary.hale@uspto.gov.**